CFD-454/455

SERVICE MANUAL

US Model
CFD-454
CFD-455

Canadian Model
CFD-454

PHOTO: CFD-455

SPECIFICATIONS

US Model:

With 3.2-ohm loads, both channels driven from 150–10,000 Hz: rated 4W, per channel minimum RMS power, with no more than 10% total harmonic distortion in AC operation.

CD player section

System	Compact disc digital audio system
Laser diode properties	Material: GaAlAs Wavelength: 780nm Emission duration: Continuous Laser output power: less than 44.6μW* *This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block.
Spindle speed	12 cm CD: Approx. 200 r.p.m. to 500 r.p.m. (CLV) 8 cm CD: Approx. 300 to 500 r.p.m (CLV)
Error correction	Sony Super Strategy Cross Interleave Read Solomon Code
Number of channels	2
Frequency response	20–20,000 Hz: $\pm\frac{1}{2}$ dB
Wow and flutter	Below measurable limit

Radio section

Frequency range	FM: 87.6–108 MHz AM: 530–1,710 kHz
Antennas	FM: Telescopic antenna AM: Built-in ferrite bar antenna

Tape recorder section and general

Recording system	4-track 2-channel stereo
Fast winding time	Approx. 2 min. with Sony cassette C60
Frequency response	With TYPE I (NORMAL) cassette: 80 ~ 10,000 Hz

Model Name Using Similar Mechanism	CD Section	CFD-60
	Tape Section	CFD-60
Optical Device Name		KSM-210BAN
Tape Transport Mechanism Type		MF-455-64

Speakers	Woofer: 12 cm dia., cone type Tweeter: 2 cm dia.
Power output	Model for Canada: 4.3W + 4.3W (at 3.2 ohms, 315 Hz, 10% harmonic distortion)
Inputs	External microphone input jack (minijack) Sensitivity 0.78 mV For low impedance microphone
Outputs	Headphones jack (stereo minijack) For 16–68 ohms impedance headphones CD out jacks (phono jack)—2 Load impedance 10 kilohms or higher Rated output 1.1V rms at load impedance 47 kilohms
Power requirements	120V AC, 60 Hz DC 12V, 8 size D (R20) batteries
Power consumption	AC 21W

Battery life

Batteries	Sony SUM-1 (NS)	Sony Alkaline AM1
FM recording	Approx. 15 hrs	Approx. 35 hrs
Disc playing	Approx. 6 hrs	Approx. 16 hrs

Dimensions	677 × 292 × 194 mm (w/h/d) (26 5/8 × 11 4/8 × 7 5/8 inches) incl. projecting parts and controls
Weight	6.7 kg (14 lb 12 oz) incl. batteries
Supplied accessory	AC power cord (1) Remote commander (for CFD-455) (1)

Design and specifications subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents.

CD RADIO CASSETTE-CORDER

SONY®

TABLE OF CONTENTS

Section	Title	Page
	Specifications	1
	Safety Check-out	2
	Servicing Notes	3
	SECTION 1. GENERAL	
	Parts Identification	4
	SECTION 2. DISASSEMBLY	5
	SECTION 3. ADJUSTMENTS	
3-1.	Mechanical Adjustments	6
3-2.	Electrical Adjustments	6
	SECTION 4. DIAGRAMS	
4-1.	Semiconductor Lead Layouts	12
4-2.	Block Diagram	13
4-3.	Printed Wiring Boards (Audio Section)	16
4-4.	Schematic Diagram (Tuner Section)	19
4-5.	Schematic Diagram (Audio Section)	21
4-6.	Schematic Diagram (CD Section)	24
4-7.	Printed Wiring Boards (CD Section)	27
4-8.	IC Block Diagram	30
	SECTION 5. EXPLODED VIEWS	31
	SECTION 6. ELECTRICAL PARTS LIST	38

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

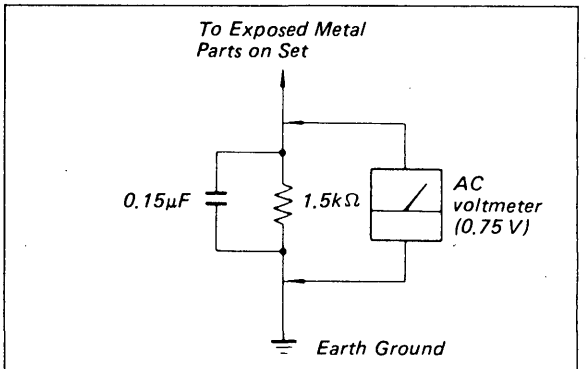


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

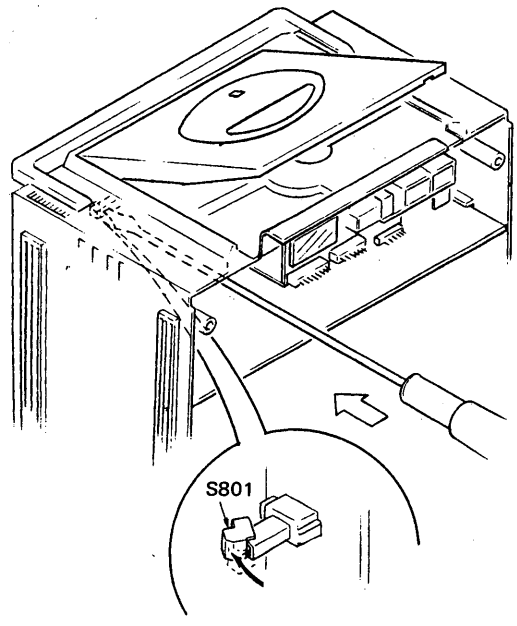
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

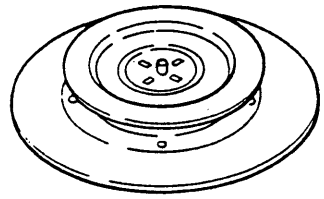
1. Turn POWER switch on with no disc inserted and make Function switch to CD position.
2. Open the lid for CD.
3. Turn on S801 as following figure.
4. Press ▶ key.
5. Confirm the laser diode emission while observing the objecting lens. When there is no emission, Auto Power Control circuit or Optical Pick-up is broken.
   Objective lens moves up and down three times for the focus search.



CHUCK PLATE JIG ON REPAIRING

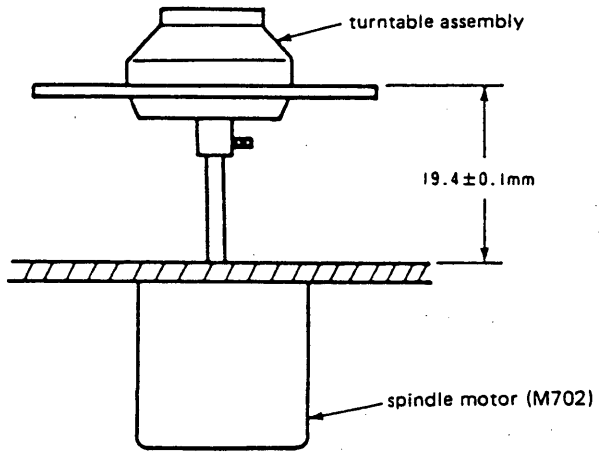
On repairing CD section, playing a disc without the CD lid, use Chuck Plate Jig.

- Code number of Chuck Plate Jig: X-4918-255-1

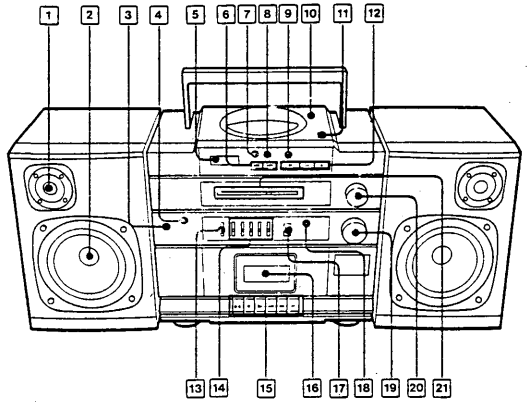


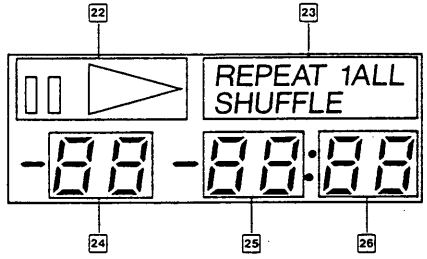
NOTE ON REPAIRING

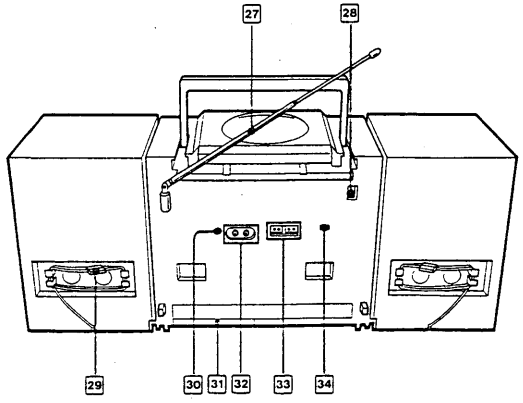
The spindle motor (M702) and the turntable assembly are individually supplied as repair parts.
When repairing M702, please order the turntable assembly together.
Dimension is as follows.



Parts Identification







1 Tweeter
2 Woofer
3 PHONES (headphones) jack (stereo minijack)
4 OPR/BATT (operation/battery) indicator
5 CD display window
6 AMS/SEARCH buttons
7 PLAY MODE (CD operation mode) selector
REPEAT 1: To repeat one of the selections.
REPEAT ALL: To repeat all of the selections.
REPEAT SHUFFLE: To play the selections repeatedly in a random order.
8 REMAIN selector
9 REMOTE SENSOR (CFD-455 only)
10 Disc cover
11 PUSH OPEN/CLOSE button
12 CD operation buttons
▶(play) ❚❚(pause) ■(stop)
13 BALANCE control
14 GRAPHIC EQUALIZER controls (for listening only)
15 Tape operation buttons
■≜(stop/eject) ●(record) ▶(playback) ◀◀(rewind) ▶▶(fast forward) ❚❚(pause)
16 Cassette holder
17 FUNCTION selector
CD: To listen to/record CD sound.
FM: To listen to/record FM radio programs.
AM: To listen to/record AM radio programs.
TAPE (CD RADIO OFF): To listen to tapes. (To turn off the CD player or the radio.)
18 FM ST (FM stereo) indicator
19 VOLUME control
20 Tuning control
21 Dial scale and pointer

Display window

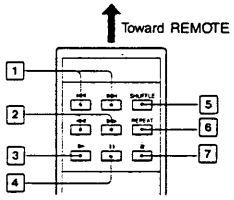
22 PAUSE/PLAY indicators
23 PLAY MODE indicators
REPEAT 1 REPEAT ALL REPEAT SHUFFLE
24 TRACK indicator
25 MIN (minute) indicator
26 SEC (second) indicator

Rear panel

27 Telescopic antenna
28 AC IN (AC power input) socket
29 Speaker cord
30 EXT MIC (external microphone input) jack (minijack)
31 Battery compartment (bottom)
32 CD OUT (CD output) jacks (phono jacks)
33 SPEAKER terminals
34 ISS (interference suppress switch)

Remote commander (for CFD-455 only)

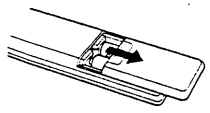
This remote commander works only for the CD section.



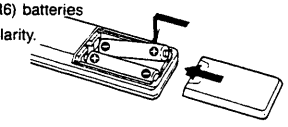
1 |◀◀/▶▶| AMS buttons
2 ◀◀/▶▶ SEARCH buttons
3 ▶ (play) button
4 ❚❚ (pause) button
5 SHUFFLE (repeat shuffle) button
6 REPEAT (repeat 1/all) button
7 ■ (stop) button

Battery installation

1



2 Two size AA (R6) batteries with correct polarity.



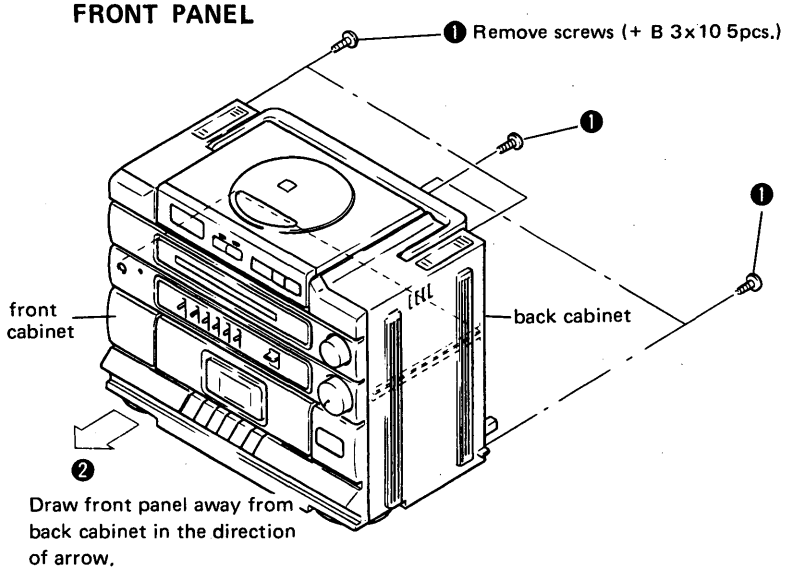
Notes on the remote commander

- Keep the commander away from extremely hot or humid places.
- To avoid malfunction, do not simultaneously depress two or more buttons.
- When the battery is exhausted, the commander will not operate the CFD-455. In this case, replace the batteries with new ones. In normal operation, battery life is up to half a year.

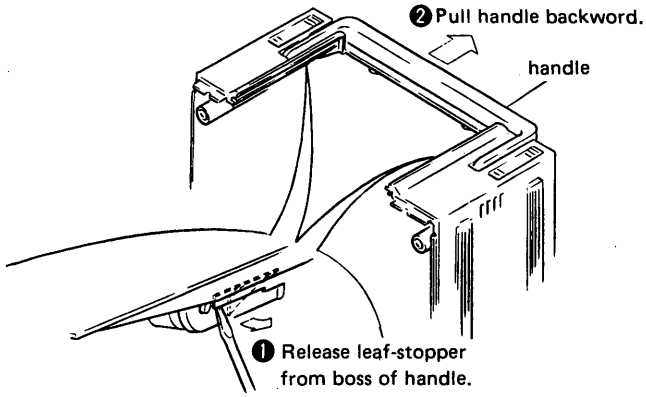
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

FRONT PANEL



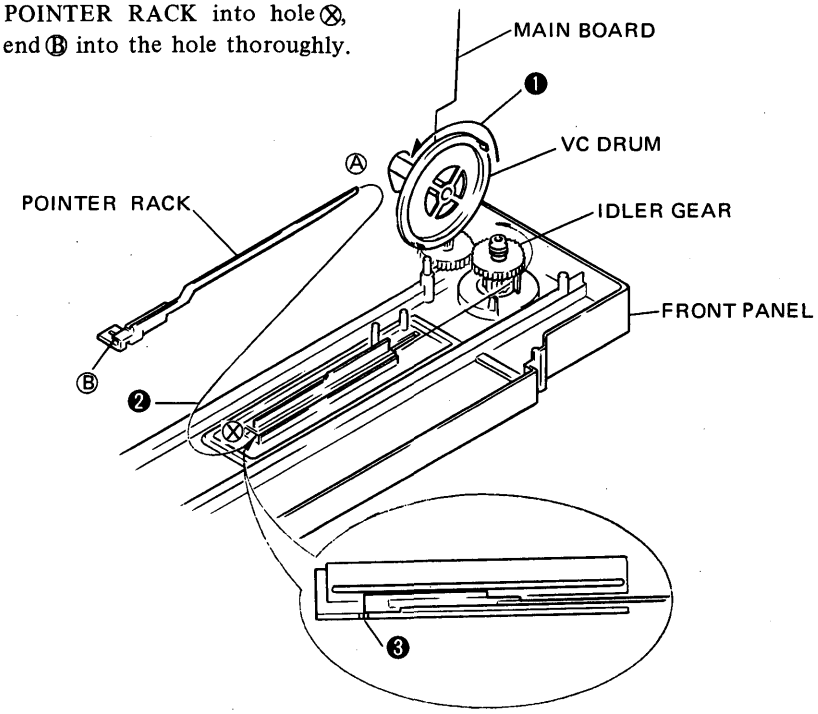
HANDLE



POINTER SETTING

❶ Turn VC DRUM counterclockwise to the end.

❷ Insert end Ⓐ of POINTER RACK into hole Ⓧ, slide it and push end Ⓑ into the hole thoroughly.



❸ Set end Ⓑ of POINTER RACK to the middle of the scratched lines.

❹ Mesh POINTER RACK with IDLER GEAR as shown by arrow.

SEE ADDITIONAL INFORMATION

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

TAPE SECTION

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback head — pinch roller
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.

Torque Measurement

Torque	Torque Meter	Meter reading
FWD	CQ-201C	22 to 55g·cm (0.31 to 0.76oz·inch)
FWD Back tension	CQ-102C	2 to 5g·cm (0.03 to 0.07oz·inch)
FF/REW	CQ-201B	more than 55g·cm (0.76oz·inch)

Tape Tension Measurement

	Tension Meter	Meter reading
FWD	CQ-403A	more than 100g

3-2. ELECTRICAL ADJUSTMENTS

TAPE SECTION

1. The adjustments should be performed in the order given in the Service Manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
2. The adjustments should be performed for both L-CH and R-CH unless otherwise indicated.

- Switch location
  FUNCTION ····· TAPE
  ISS ····· 2
  GRAPHIC EQUALIZER ····· center click
  BALANCE ····· center click
  VOLUME ····· mechanical center

Standard Input Level

	MIC IN	LINE IN
source impedance	600 Ω	10k Ω
input level	0.775mV (-60dB)	0.44V (-5dB)

Standard Output Level

	SP OUT	HEADPHONES
load impedance	3.2 Ω	32 Ω
output level	0.775V (0dB)	0.25V (-10dB)

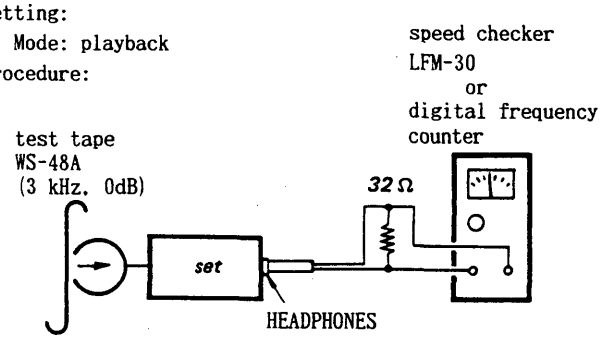
·Test Tape

Type	Signal	Used for
WS-48A	3 kHz, 0dB	Tape Speed Adjustment

0 dB=0.775V

Tape Speed Adjustment

Setting:
Mode: playback
Procedure:

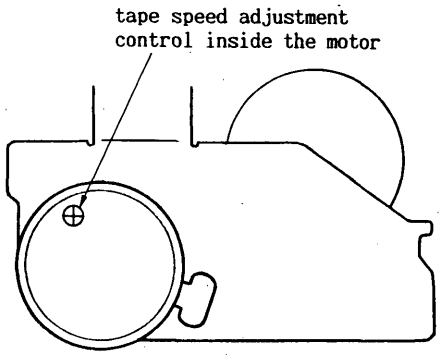


Adjustment Values:

Speed checker	Digital frequency counter
±1.5%	2,955 to 3,045 Hz

Frequency difference between the beginning and the end of the tape should be within 1 %(30 Hz).

Adjustment Location:



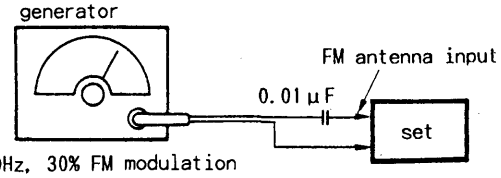
RADIO SECTION

·Repeat the procedures in each adjustment several times. and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

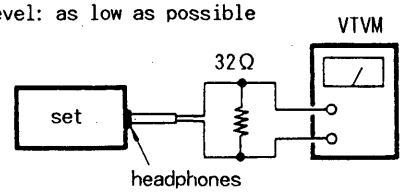
● FM SECTION

FUNCTION: RADIO
BAND: FM

FM rf signal generator



400Hz, 30% FM modulation
frequency deviation: ±22.5kHz
output level: as low as possible



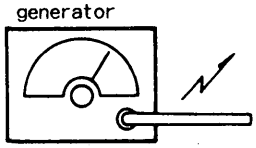
FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
109.5 MHz	86.5 MHz
CT1-2	L2

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
109.5MHz	86.5MHz
CT1-1	L1

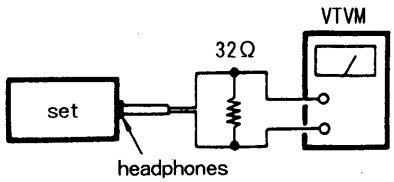
● AM SECTION

FUNCTION: RADIO
BAND: AM

AM rf signal generator



30% amplitude modulation
by 400Hz signal
output level: as low as possible

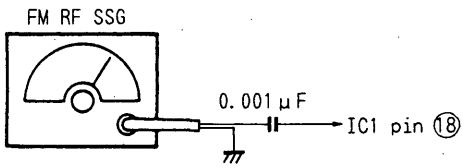


AM IF ALIGNMENT
Adjust for a maximum reading on VTVM.
455 kHz
CP1

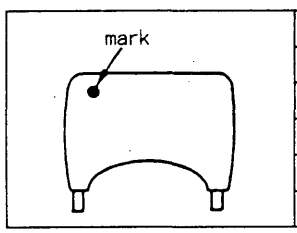
AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
1,760 kHz	516 kHz
CT1-4	T1

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
1,400 kHz	620 kHz
CT1-3	L3

FM VCO ADJUSTMENT

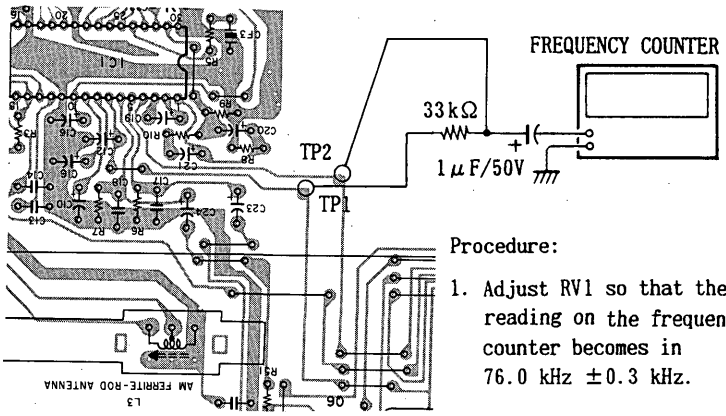


CarrierFrequency: According to the color of the mark on ceramic filter(CF2).



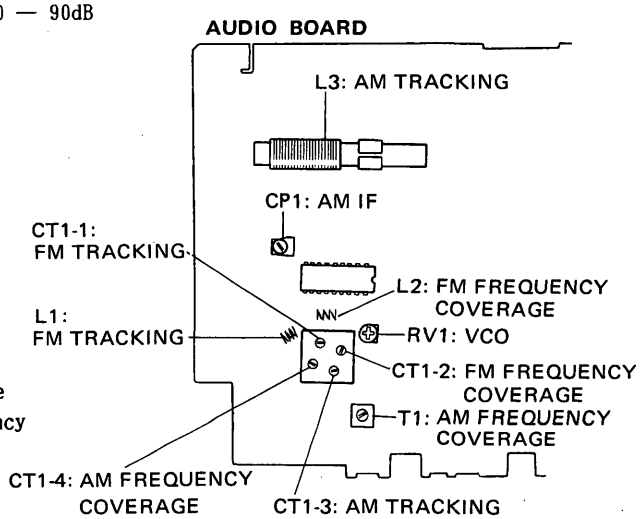
Mark	Carrier Frequency
red	10.7 MHz
blue	10.67MHz
orange	10.73MHz
black	10.64MHz
white	10.76MHz

Output Level: 80 — 90dB



Procedure:

1. Adjust RV1 so that the reading on the frequency counter becomes in 76.0 kHz ±0.3 kHz.



CD SECTION

Notes on Adjustment

1. Perform adjustment in service mode.
   After adjustment, be sure to release service mode.
2. Perform adjustments in the order given.
3. Use the disc (YEDS-18, Part No. 3-702-101-01) only when so indicated.

Before Adjustment

Put the set into service mode and perform the following checks. Repair if there are any problems.

- **Sled Motor Check**

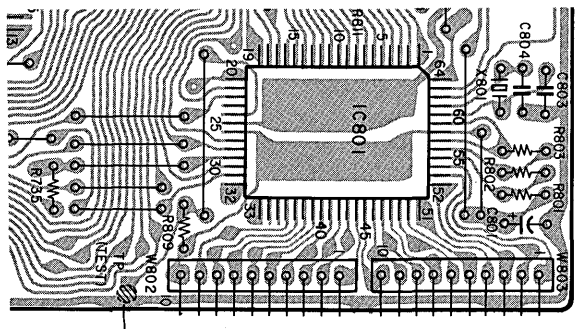
1. Press ▶ key, then press ■ key.
2. Press ▶▶|, |◀◀ keys and confirm that the FOP moves smoothly from the innermost to outermost circumference and back smoothly and with no catching or abnormal noises.
   ▶▶| : FOP moves to the outer circumference
   |◀◀ : FOP moves to the inner circumference

- **Focus Search Check**

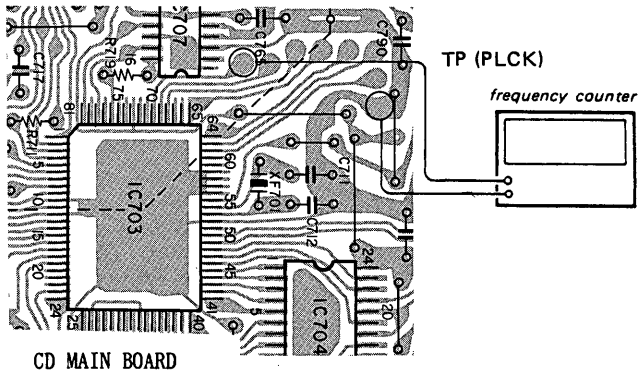
1. Press ▶ key. (Focus search operation is performed continuously.)
2. Look at the FOP objective lens and confirm that it moves up and down smoothly, with no catching or abnormal noises.
3. Press ■ key.
   Confirm that focus search operation stops. If it does not, press ■ key again longer.

How to Put the Set into Service Mode

1. Solder-bridge the following portion on the CD main board.
2. Turn the power on.

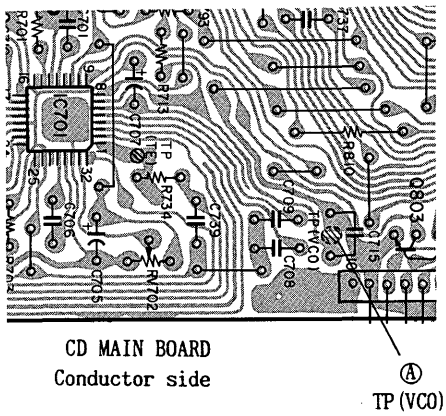


VCO Adjustment



Adjustment Procedure:

1. Make a solder bridge at portion Ⓐ on CD main board.
2. Adjust RV703 so that the reading on the frequency counter becomes 4.3218MHz.
3. Remove the solder-bridge at Ⓐ potion.

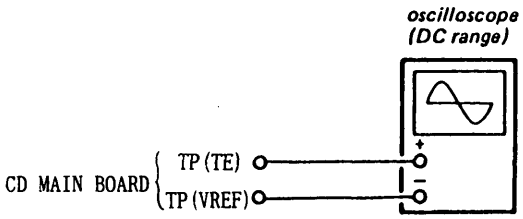


● See page 11 for Adjustment Location.

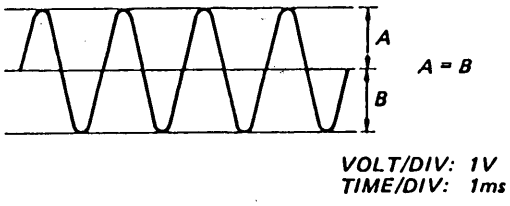
Traverse Adjustment

This adjustment is to be done when the optical block is replaced.

Adjustment Procedure:



1. Connect the oscilloscope between TP(TE) and TP(VREF).
2. Put the set into service mode.
3. Press the ▶▶| and |◀◀ keys to move the FOP to the center.
4. Insert disc(YEDS-18) and press ▶ key.
5. Adjust RV701 so that the oscilloscope traverse waveform is symmetrical, as shown in the figure below.
6. Release service mode after adjustment is completed.

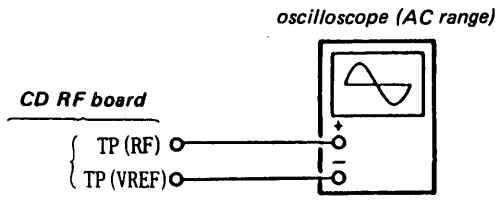


Adjustment value: $2 \pm 0.5 V_{p-p}$

Focus Bias Adjustment

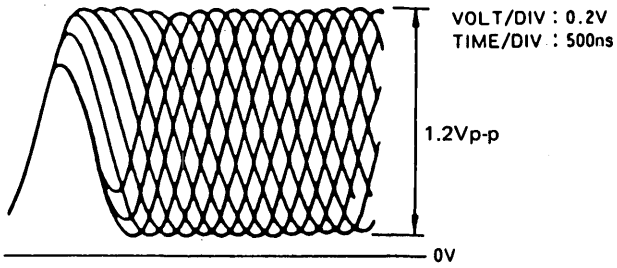
This adjustment is to be done when the optical block is replaced.

Adjustment Procedure:



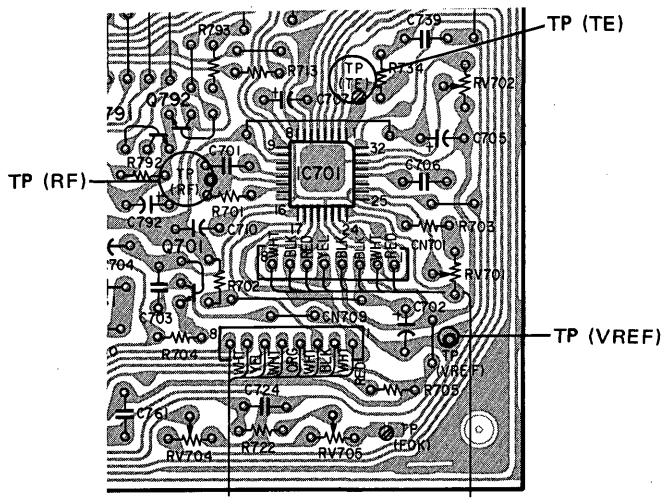
1. Connect the oscilloscope between TP(RF) and TP(VREF).
2. Put the set into service mode.
3. Press the ▶▶| and |◀◀ keys to move the FOP to the center. (Move the FOP to the music area on the disc to enable easy visibility of the eye pattern.)
4. Insert disc(YEDS-18) and press ▶ key.
5. Adjust RV702 so that the oscilloscope waveform is as shown in the figure below(eye pattern).
   A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished .
6. Release service mode after adjustment is completed.

- RF signal reference waveform(eye pattern).



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

CD MAIN BOARD (CONDUCTOR SIDE)



- See page 11 for Adjustment Location.

REFERENCE

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

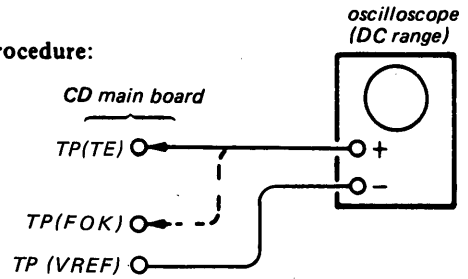
Gain / Symptoms	Focus	Tracking
• The time until music starts becomes longer for STOP ⏏▶ PLAY or automatic selection (⏮ ⏭ buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP⏏▶ PLAY or automatic selection (⏮ ⏭ buttons pressed.)	–	low
• Disc table opens shortly after STOP⏏▶ PLAY.	low or high	–
• Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
• More poise during 2-axis device operation.	high	high

The following is a simple adjustment method.

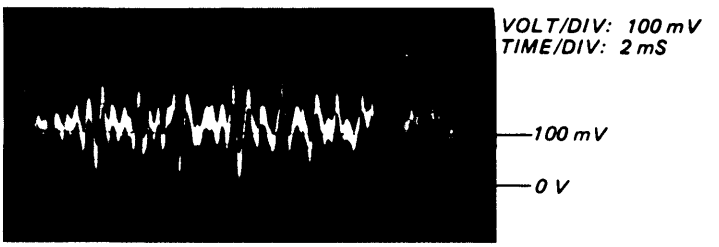
– Simple Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:

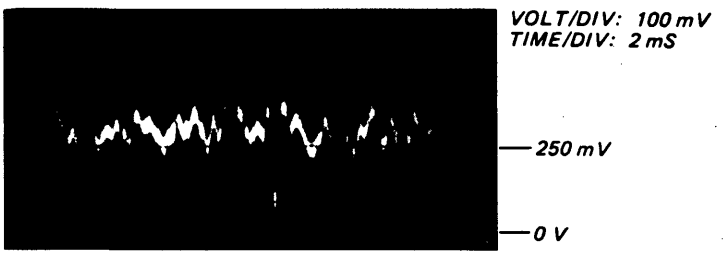


1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Insert disc (YEDS-18) and press ▶PLAY button.
3. Connect oscilloscope to CD main board TP(FOK).
4. Adjustment RV705 so that the waveform is as shown in the figure below. (focus gain adjustment)

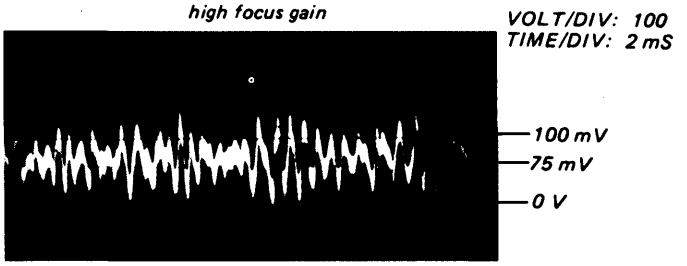


- Incorrent Examples (DC level changes more than on adjusted waveform)

low focus gain



high focus gain

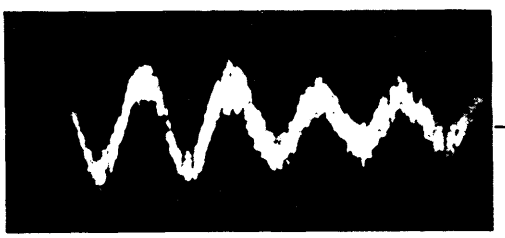


5. Connect oscilloscope to TP(TE).

6. Adjust RV704 so that the waveform is as shown in the figure below. (tracking gain adjustment)

- Incorrect Examples (fundamental wave appears)

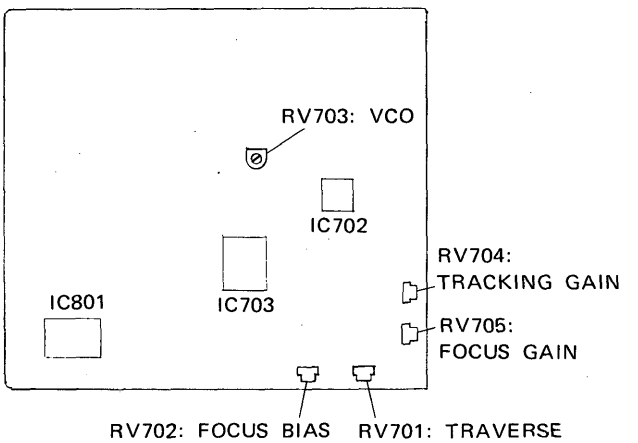
low tracking gain

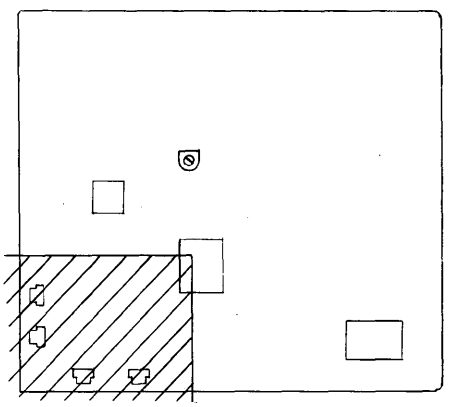


high tracking gain
(higher fundamental wave than for low gain)

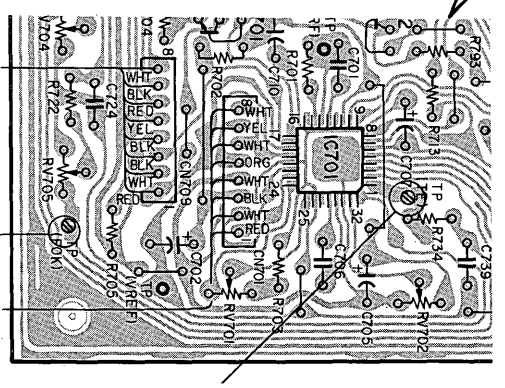
Adjustment Location:

CD MAIN BOARD
—Component side—





CD MAIN BOARD



* Note: When a frequency response analyzer is used:

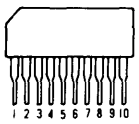
*
Remove the solder bridge white adjustment of focus gain.
(After adjustment make the solder bridge.)

*
Remove the solder bridge while adjustment of tracking gain.
(After adjustment make the solder bridge.)

SECTION 4
DIAGRAMS

4-1. SEMICONDUCTOR LEAD LAYOUTS

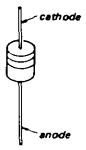
BA3312N



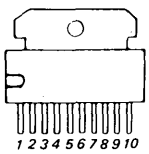
DTA124ES
DTC143TS
DTC144WS
2SA1115P
2SC3400
2SC4048

2SB1068K
2SC2001

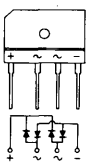
RD6.2ES-B2
RD6.8ES-B2
RD10ES-B2
1SS119



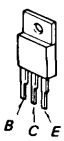
BA6293



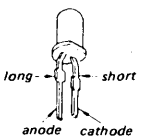
D3SBA10



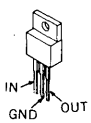
2SD1913SA-Q
2SD1944K



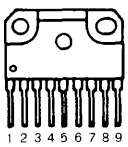
SEL2210R



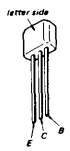
PST529D



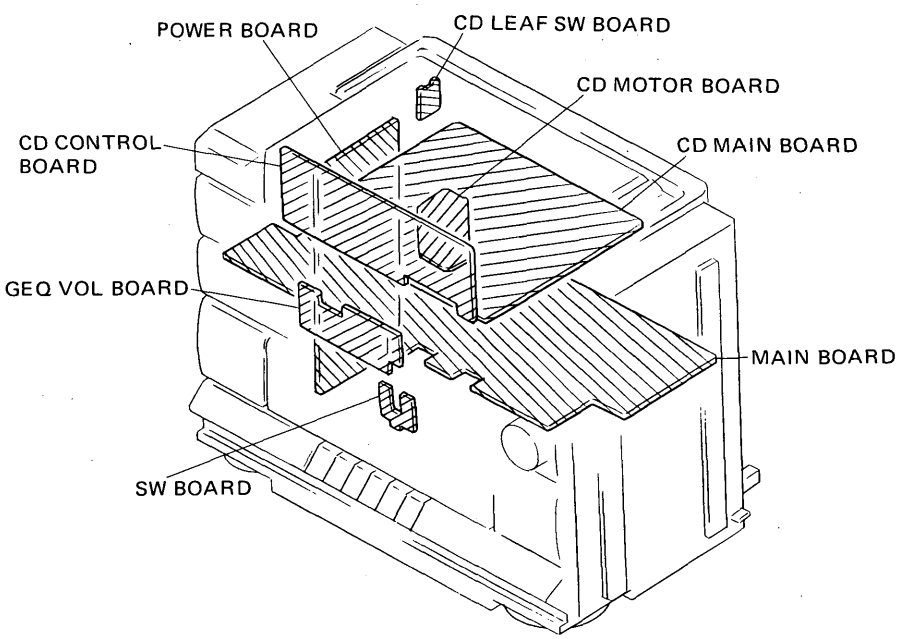
LA4597



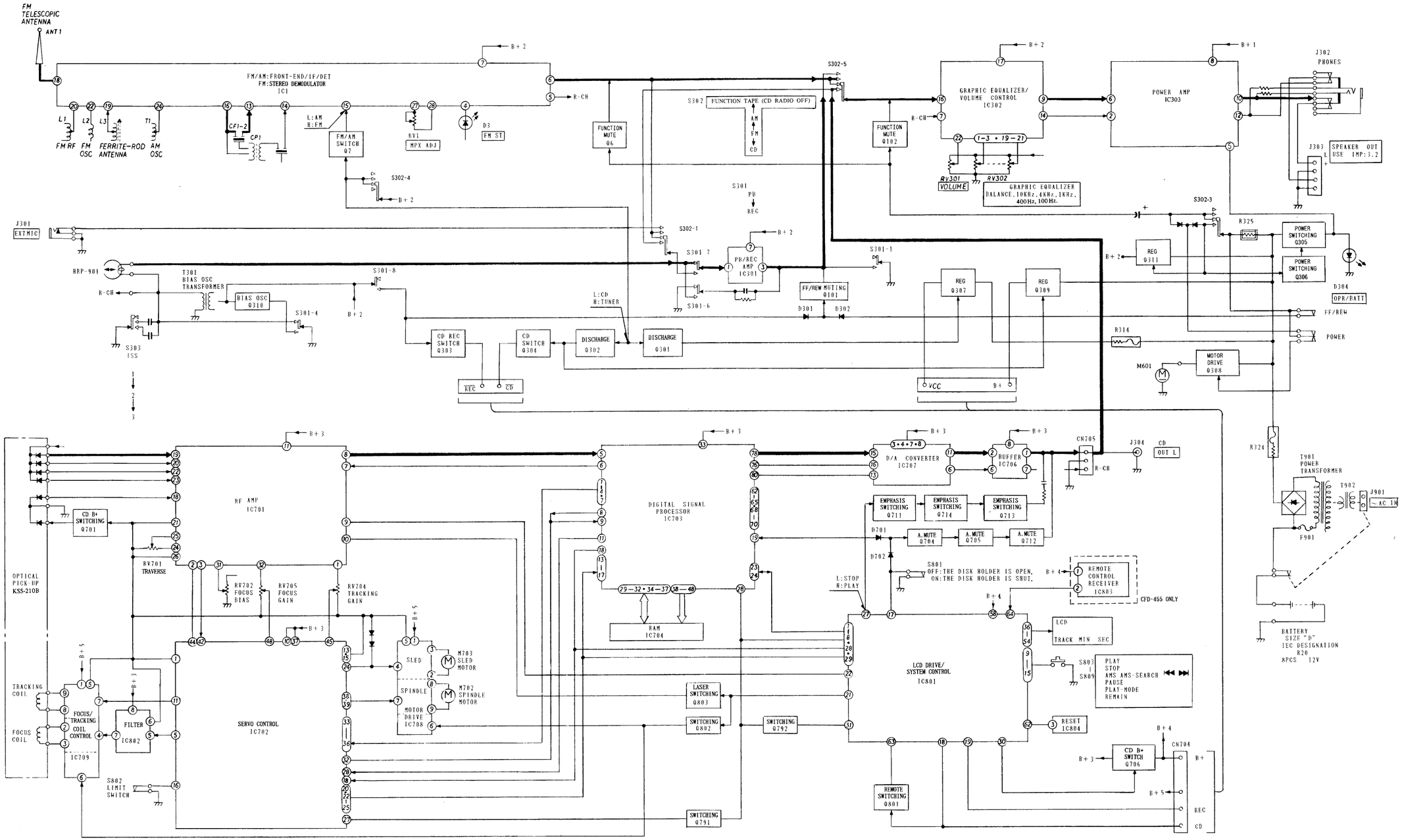
2SC2785-HFE



- **CIRCUIT BOARDS LOCATION**



4-2. BLOCK DIAGRAM

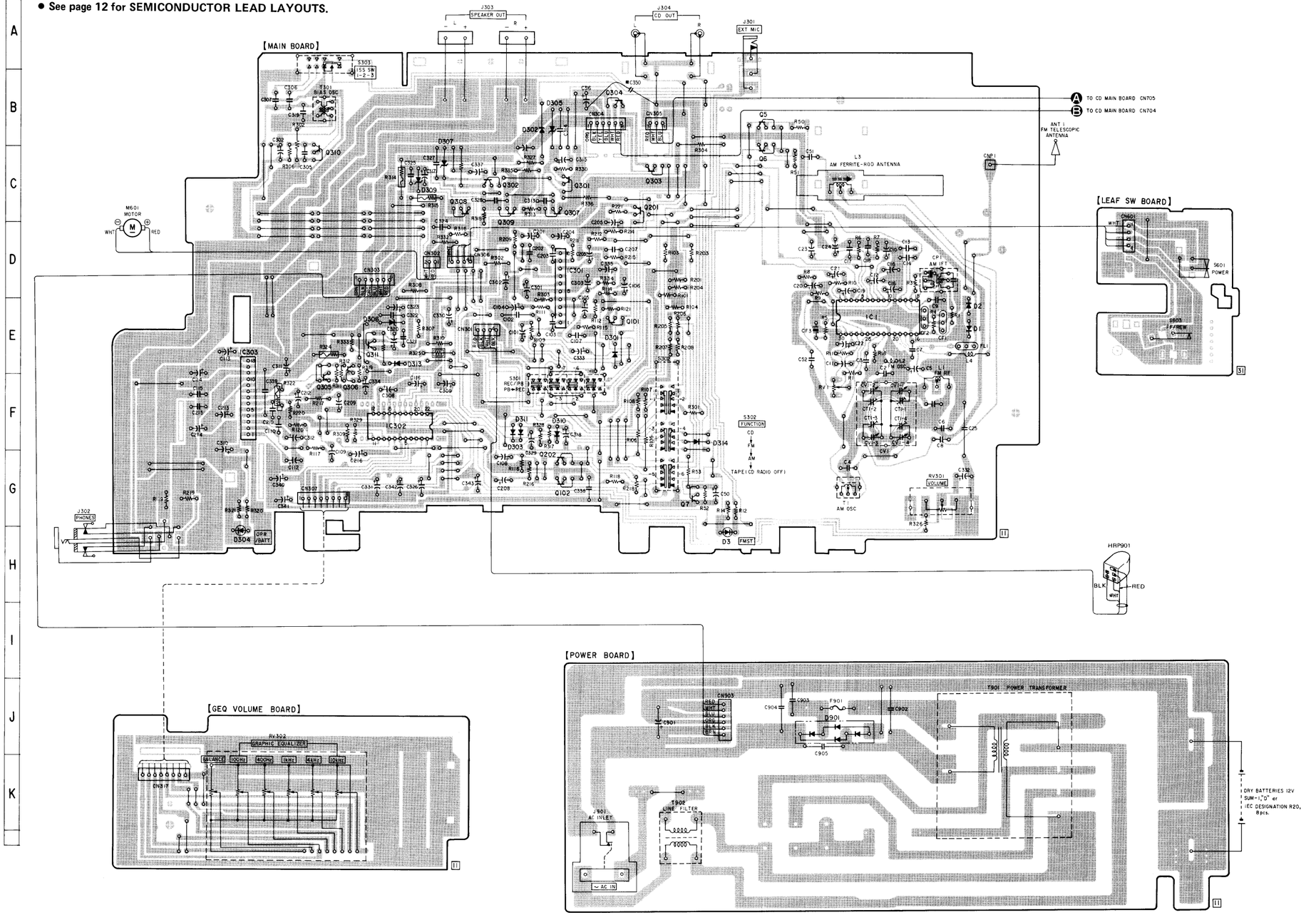


4-3. PRINTED WIRING BOARDS (Audio Section)

- **SEMICONDUCTOR LOCATION**

Ref. No.	Location	Ref. No.	Location
D1	E-13	IC303	E-3
D2	E-13		
D3	H-10	Q5	B-10
D301	E-8	Q6	C-10
D302	B-7	Q7	G-9
D303	F-7	Q101	E-9
D304	H-3	Q102	G-8
D305	B-8	Q201	C-9
D306	E-5	Q202	G-7
D307	B-6	Q301	C-8
D309	C-6	Q302	C-7
D310	F-8	Q303	C-9
D311	F-7	Q304	B-8
D313	E-6	Q305	F-4
D314	F-10	Q306	F-5
D901	J-11	Q307	C-8
		Q308	C-6
IC1	E-12	Q309	C-7
IC301	D-8	Q310	C-5
IC302	F-5	Q311	E-5

● See page 12 for SEMICONDUCTOR LEAD LAYOUTS.



【MAIN BOARD (1/2)】 (TUNER)

IC1 CXA1238S FM/AM FRONT-END FM/AM IF AMP, DET FM STEREO DEMODULATOR

ANT1

FL1 BPF

L1 FM RF COIL

L2 FM OSC COIL

L3 AM FERRITE-ROD ANTENNA

L4 47uH

T1

AM OSC

CP1 AM IFT

CF1 FM IF

CF3

D1 1SS133

D2 1SS133

To Audio GND

Q7 2SC4048 BAND SELECT

Q5,6 DTC144WS MUTING

D3 SEL2210R FMST

FM VCO

TO AUDIO BLOCK

LED +B

GND

R

L

BAND

MUTE

+B

IC1 CXA1238S

FM FRONT-END

AM FRONT-END

REG.

VCO

MPX REG.

FM IF/ DISCRI.

AM IF/DET

1/2 COUNTER

PD1

PD2

TUNING INDICATOR

AUTOBLEND

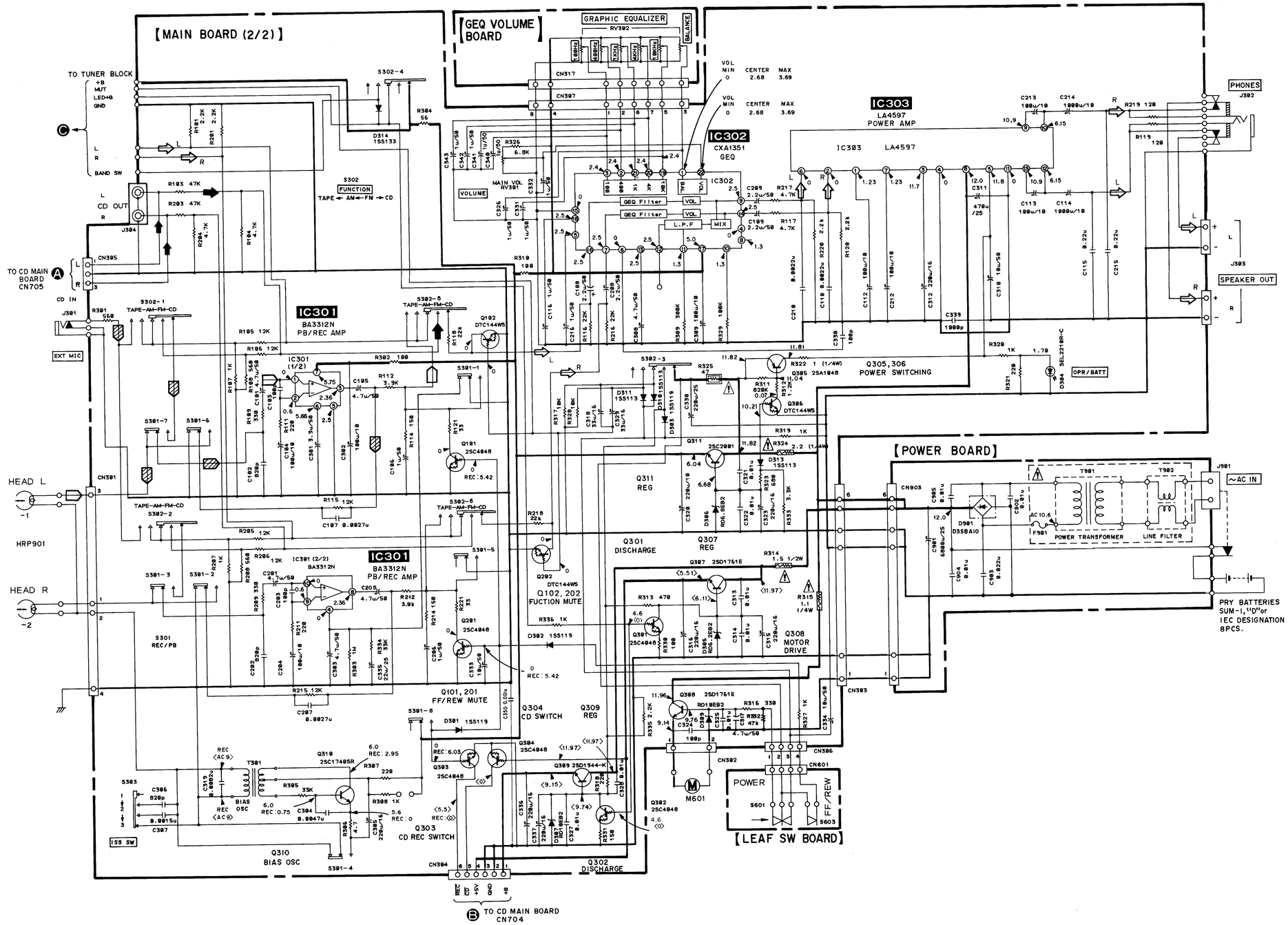
MONO/ST SELECT

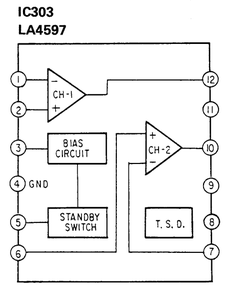
MUTING

BAND PASS MUTE

DECORD AMP

RIPPLE FILTER

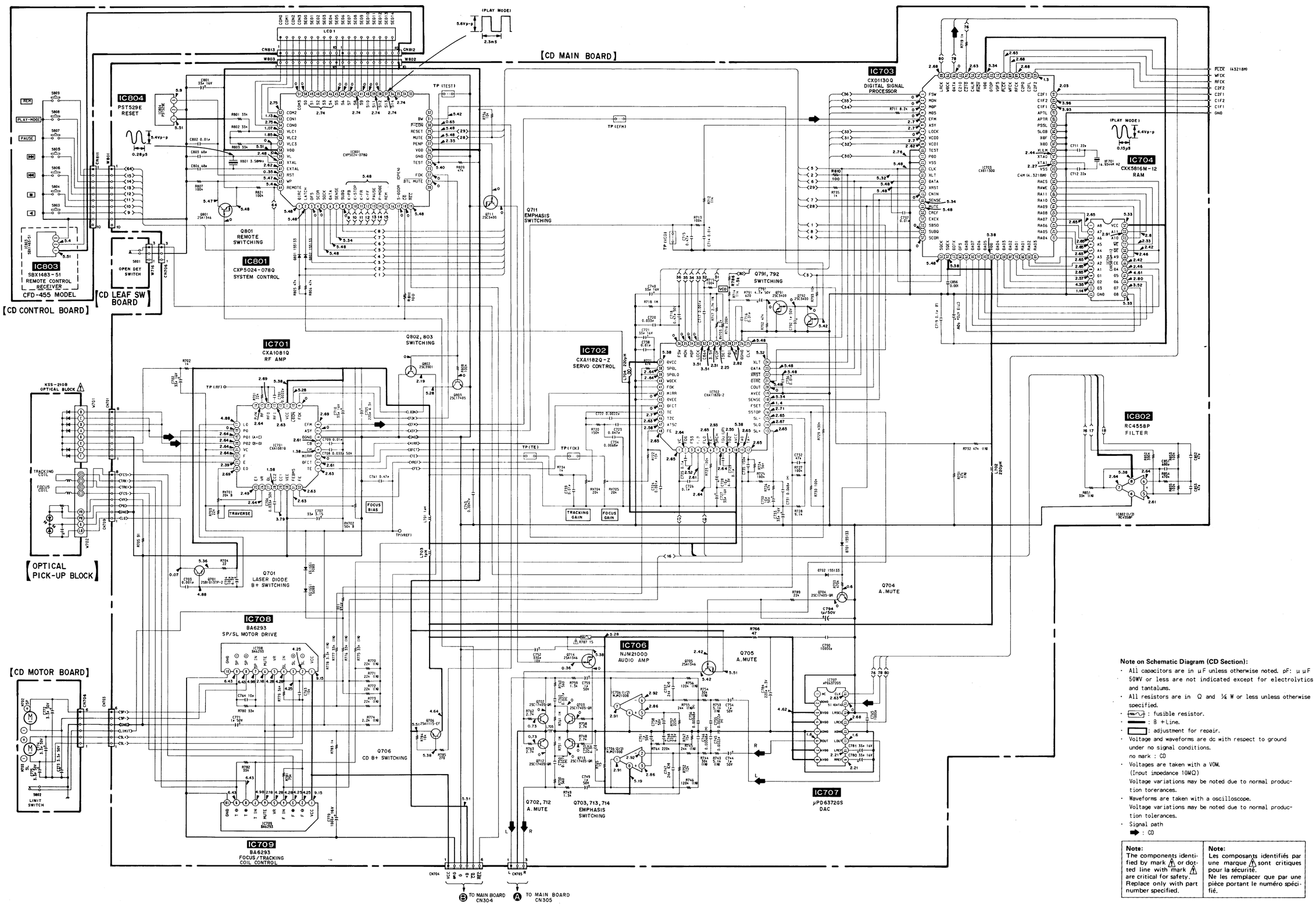




Note on Schematic Diagram (Tuner/Audio Section):

- All capacitors are in uF unless otherwise noted. pF: u uF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- Δ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : B +Line.
- : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Total current is measured with no cassette installed.
- Voltage and waveforms are dc with respect to ground under no signal (detuned) conditions.
  no mark : FM
  ( ) : AM
  〈 〉 : CD
- Voltages are taken with a VOM.
  (Input impedance 10MΩ)
  Voltage variations may be noted due to normal production torerances.
- Signal path
  : FM ➡ : CD
  : PB
  : REC

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



Note on Schematic Diagram (CD Section):

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- : fusible resistor.
- : B +Line.
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no signal conditions.
  no mark : CD
- Voltages are taken with a VOM.
  (Input impedance 10MΩ)
  Voltage variations may be noted due to normal production torerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Signal path
  : CD

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

4-7. PRINTED WIRING BOARDS (CD Section)

- See page 12 for SEMICONDUCTOR LEAD LAYOUTS.

【CD MAIN BOARD】

【CD LEAF SW BOARD】

【CD CONTROL BOARD】 (COMPONENT SIDE)

【CD MOTOR BOARD】

KSS-210B (OPTICAL PICK-UP BLOCK)

- SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D701	B-5	IC804	A-6
D702	B-5		
D801	C-6	Q701	F-7
D802	C-6	Q702	D-3
D804	G-3	Q703	D-3
D805	F-3	Q704	B-6
		Q705	D-3
IC701	F-7	Q706	D-3
IC702	F-5	Q711	A-5
IC703	D-6	Q712	C-3
IC704	D-7	Q713	C-3
IC706	C-4	Q714	D-4
IC707	D-5	Q791	F-6
IC708	E-3	Q792	F-7
IC709	E-3	Q801	A-6
IC801	B-7	Q802	B-6
IC802	G-3	Q803	D-8
IC803	F-13		

LCD 1

4-8. IC BLOCK DIAGRAM

IC701 CXA1081Q

IC702 CXA1182Q

IC703 CDX1130Q

IC707 μPD6372GS

IC708, 709 BA6293

SECTION 5
EXPLODED VIEWS

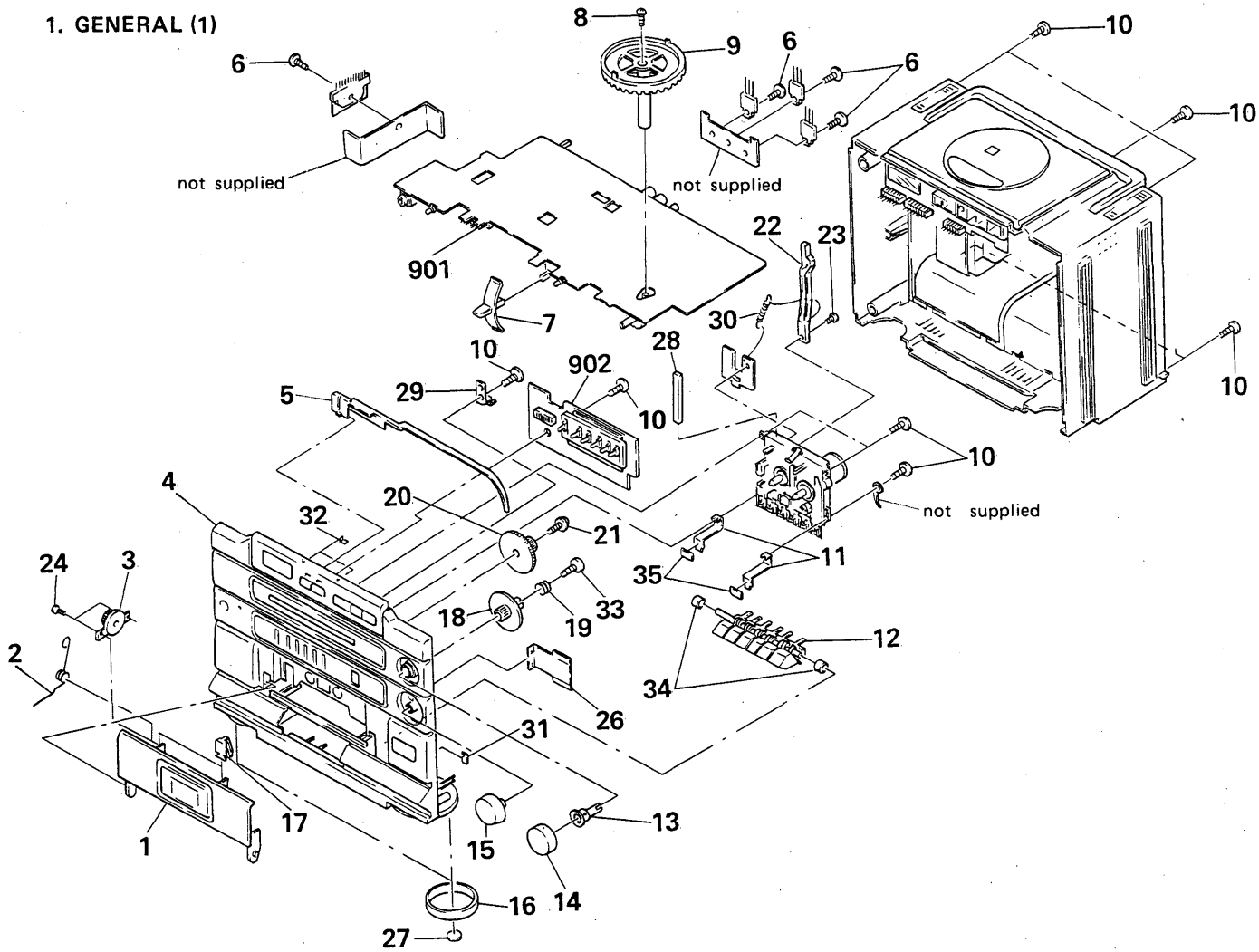
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts' Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

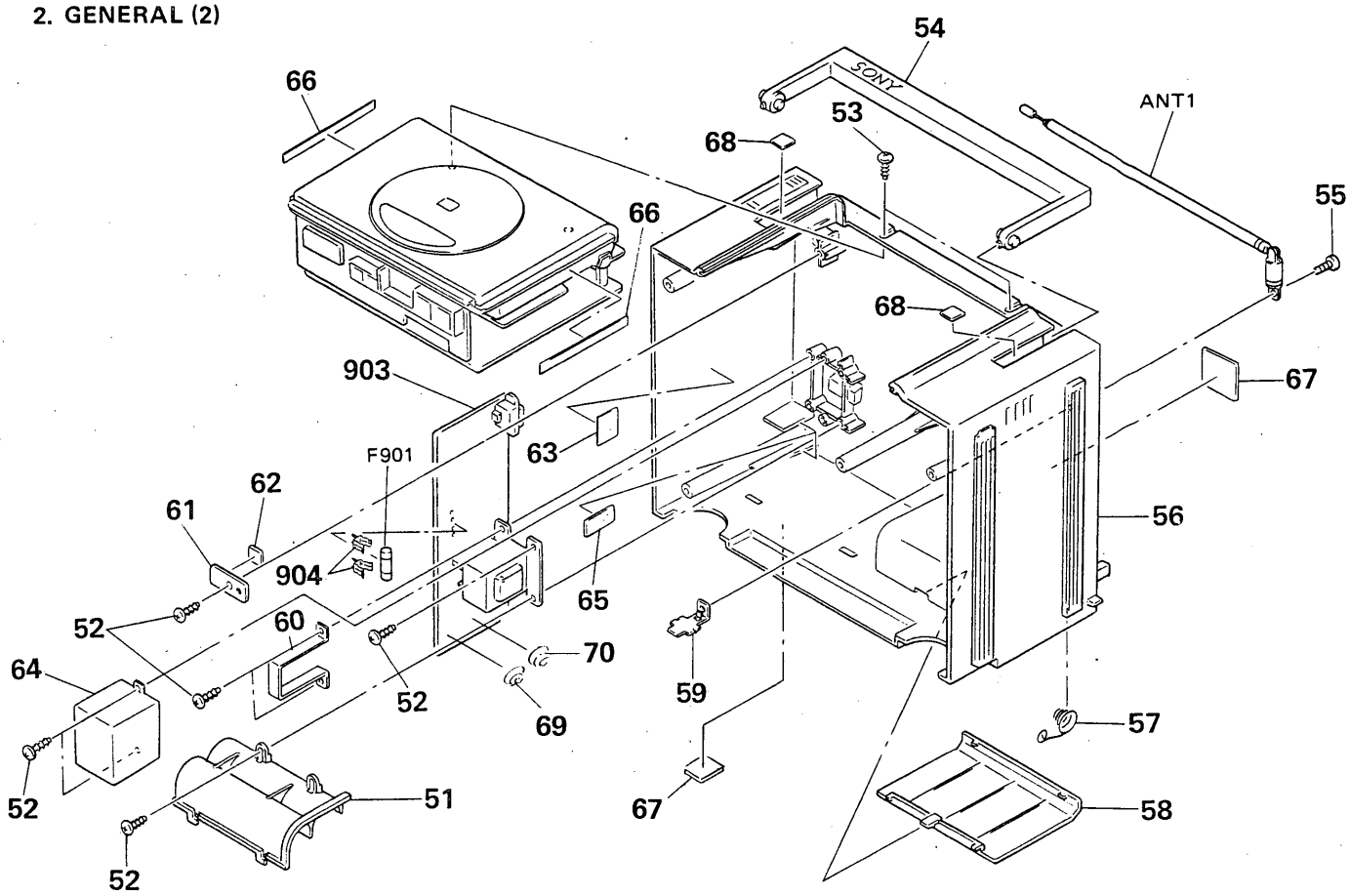
1. GENERAL (1)



No.	Part No.	Description	Remarks
1	X-4920-912-1	HOLDER SUB ASSY, CASSETTE	
2	4-920-985-01	SPRING (H)	
3	3-343-248-01	DAMPER (P), SMALL	
4	X-4920-913-1	(455)...CABINET (FRONT) SUB ASSY	
	X-4920-916-1	(454)...CABINET (FRONT) SUB ASSY	
5	4-930-209-01	RACK, POINTER	
6	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
7	3-323-803-11	KNOB, BAND SELECTION	
8	7-621-770-67	SCREW +P 2.6X6	
9	*4-920-997-01	GEAR, V.C.	
10	7-685-648-79	SCREW, TAPPING +BV 3X12	
11	*4-920-984-01	RETAINER	
12	X-4920-909-1	BUTTON BLOCK ASSY	
13	4-920-993-01	JOINT (B)	
14	4-920-975-01	KNOB (TUNING)	
15	4-920-976-01	KNOB (VOLUME)	
16	4-921-918-01	PLATE, ORNAMENTAL	
17	4-930-233-01	SPRING	

No.	Part No.	Description	Remarks
18	4-920-998-01	GEAR, IDLER	
19	4-920-979-01	SPRING	
20	4-920-977-01	GEAR, CONVERSION	
21	4-880-333-01	+ PTPWH (2.6X5)	
22	*4-920-992-01	LEVER (REC)	
23	7-685-133-19	SCREW +P 2.6X6 TYPE2 NON-SLIT	
24	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
26	4-930-230-01	GUIDE, POINTER	
27	4-930-231-01	FOOT	
28	4-930-255-01	CUSHION	
29	4-930-249-01	RETAINER (VC)	
30	4-930-258-01	SPRING, TENSION	
31	3-831-441-XX	CUSHION, CABINET UPPER 10X7X0.3	
32	*3-846-067-11	SPACER	
33	4-930-277-01	SCREW 4.5X8	
34	4-930-254-01	COLLAR B	
35	4-930-265-01	CUSHION (D)	
901	*A-3260-908-A	MOUNTED PCB, MAIN	
902	*1-629-991-11	PC BOARD, GEQ VOL	

2. GENERAL (2)

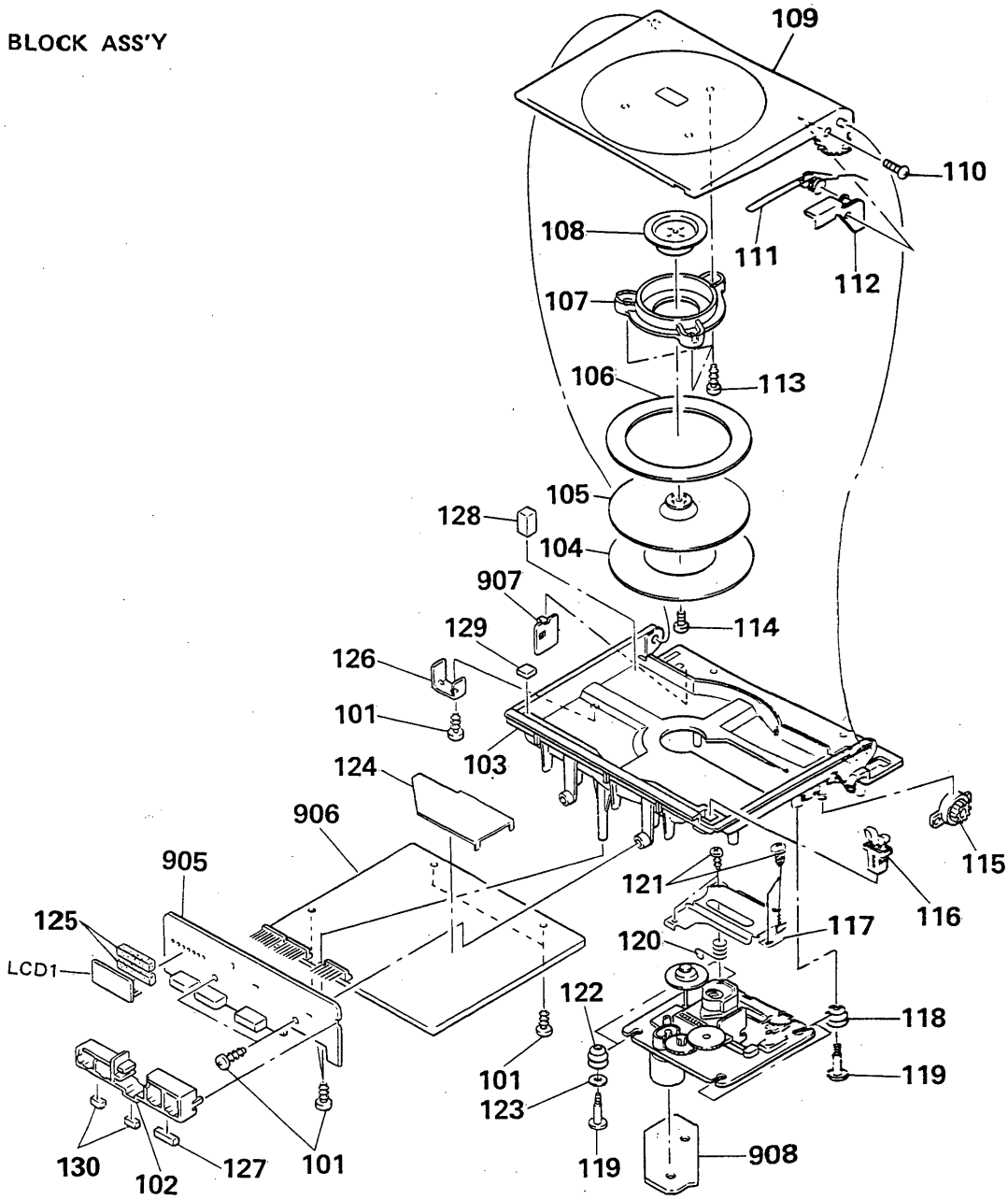


Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks
51	*4-930-207-01	CASE, BATTERY RECEIVE	
52	7-685-648-79	SCREW, TAPPING +BV 3X12	
53	7-685-647-79	SCREW +BTP 3X10 TYPE2 N-S	
54	4-930-206-01	HANDLE	
55	7-682-549-04	SCREW +B 3X10	
56	4-930-217-01	(455).....CABINET (REAR)	
	4-930-217-21	(454:US).....CABINET (REAR)	
	4-930-217-41	(454:Canadian)...CABINET (REAR)	
57	4-920-987-01	SPRING (C)	
58	4-930-208-01	LID, BATTERY CASE	
59	*4-920-986-01	TERMINAL, ANTENNA	
60	4-930-241-01	INSULATOR	
61	4-930-223-01	RETAINER, INLET	

No.	Part No.	Description	Remarks
62	3-831-441-XX	CUSHION	
63	3-703-044-26	LABEL, CAUTION	
64	4-930-252-01	PLATE, SHIELD	
65	3-840-486-01	CUSHION SP	
66	4-913-945-01	CUSHION	
67	*4-930-253-01	(454:Canadian)...LABEL, MODEL NUMBER	
68	3-713-907-01	SPACER, CAM	
69	4-920-988-01	SPRING, BATTERY (-)	
70	4-930-222-01	SPRING, BATTERY (A)	
903	*1-629-992-11	PC BOARD, POWER	
904	1-533-217-31	HOLDER, FUSE	
ANT1	1-501-383-21	ANTENNA, TELESCOPIC	
F901	⚠.1-532-747-11	FUSE, GLASS TUBE (5A)	

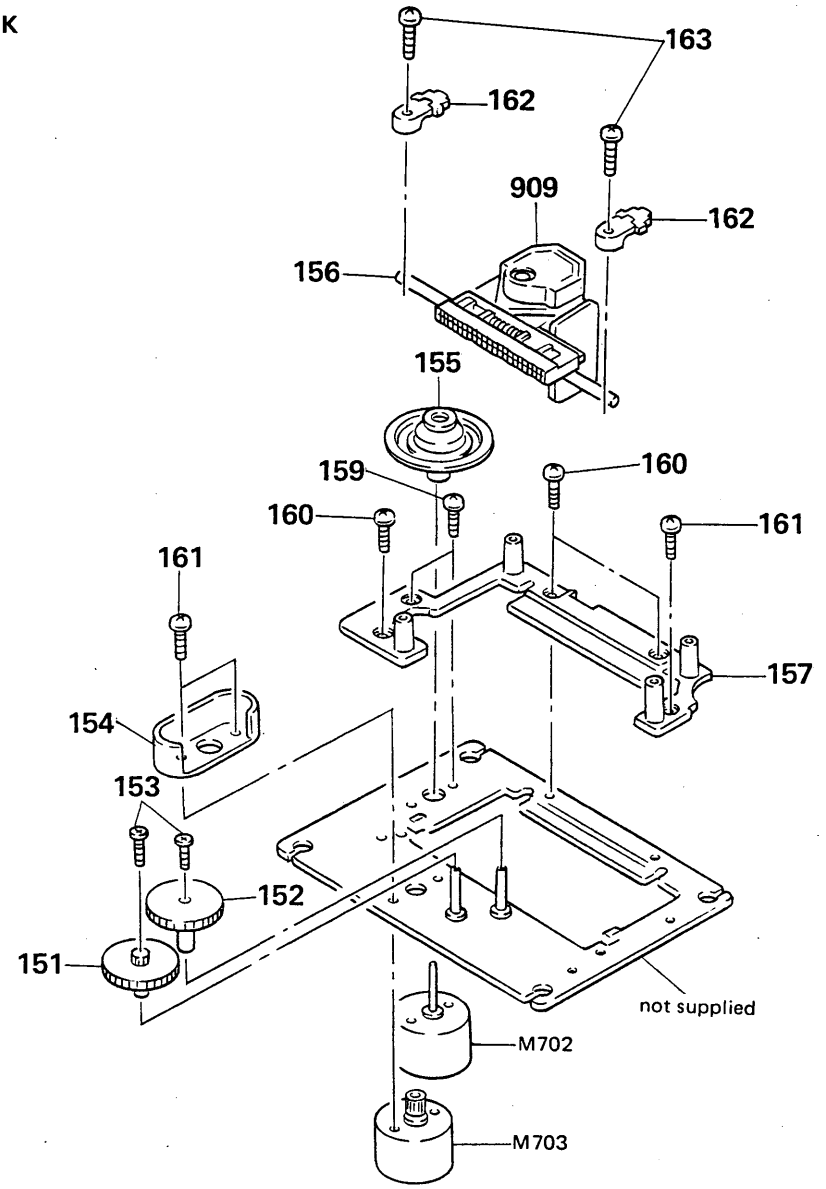
3. CD BLOCK ASS'Y



No.	Part No.	Description	Remarks
101	7-685-648-79	SCREW, TAPPING +BV 3X12	
102	4-930-226-01	SUPPORT, BUTTON, CD	
103	4-930-216-01	CHASSIS (CD)	
104	4-919-972-01	WASHER	
105	4-919-973-01	PLATE (C), CHUCK	
106	4-923-370-01	WASHER (CD)	
107	*4-925-922-11	COVER, CHUCKING	
108	X-4918-291-1	MAGNET (B) ASSY	
109	X-4920-911-1	LID SUB ASSY, CD	
110	7-621-255-25	SCREW +BVTT 2X4 (S)	
111	4-920-980-01	SPRING (CD)	
112	X-4920-910-1	PLATE ASSY, FULCRUM	
113	7-685-133-19	SCREW +P 2.6X6 TYPE2 NON-SLIT	
114	7-621-772-00	SCREW +B 2X3	
115	3-343-248-01	DAMPER (P), SMALL	
116	4-386-710-01	CATCH, PUSH	
117	*4-928-936-01	COVER, CD	
118	4-922-858-01	DAMPER	

No.	Part No.	Description	Remarks
119	4-920-989-01	SCREW (D)	
120	4-931-358-01	SPRING	
121	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
122	4-922-858-11	DAMPER	
123	4-930-232-01	WASHER (C)	
124	4-930-246-11	PAPER, SHIELD	
125	4-908-075-11	CUSHION	
126	4-930-256-01	PLATE (L)	
127	4-930-262-01	CUSHION (L)	
128	4-930-263-01	CUSHION (C)	
129	4-930-261-01	CUSHION (E)	
130	4-930-264-01	CUSHION (S)	
905	*1-629-994-11	PC BOARD, CD CONTROL	
906	*A-3216-732-A	(455)...PC BOARD ASSY, MAIN, CD	
	*A-3216-743-A	(454)...PC BOARD ASSY, MAIN, CD	
907	*1-629-996-11	PC BOARD, CD LEAF SW	
908	*1-629-995-11	PC BOARD, CD MOTOR	

4. OPTICAL BLOCK (KSM-Z10BAN)



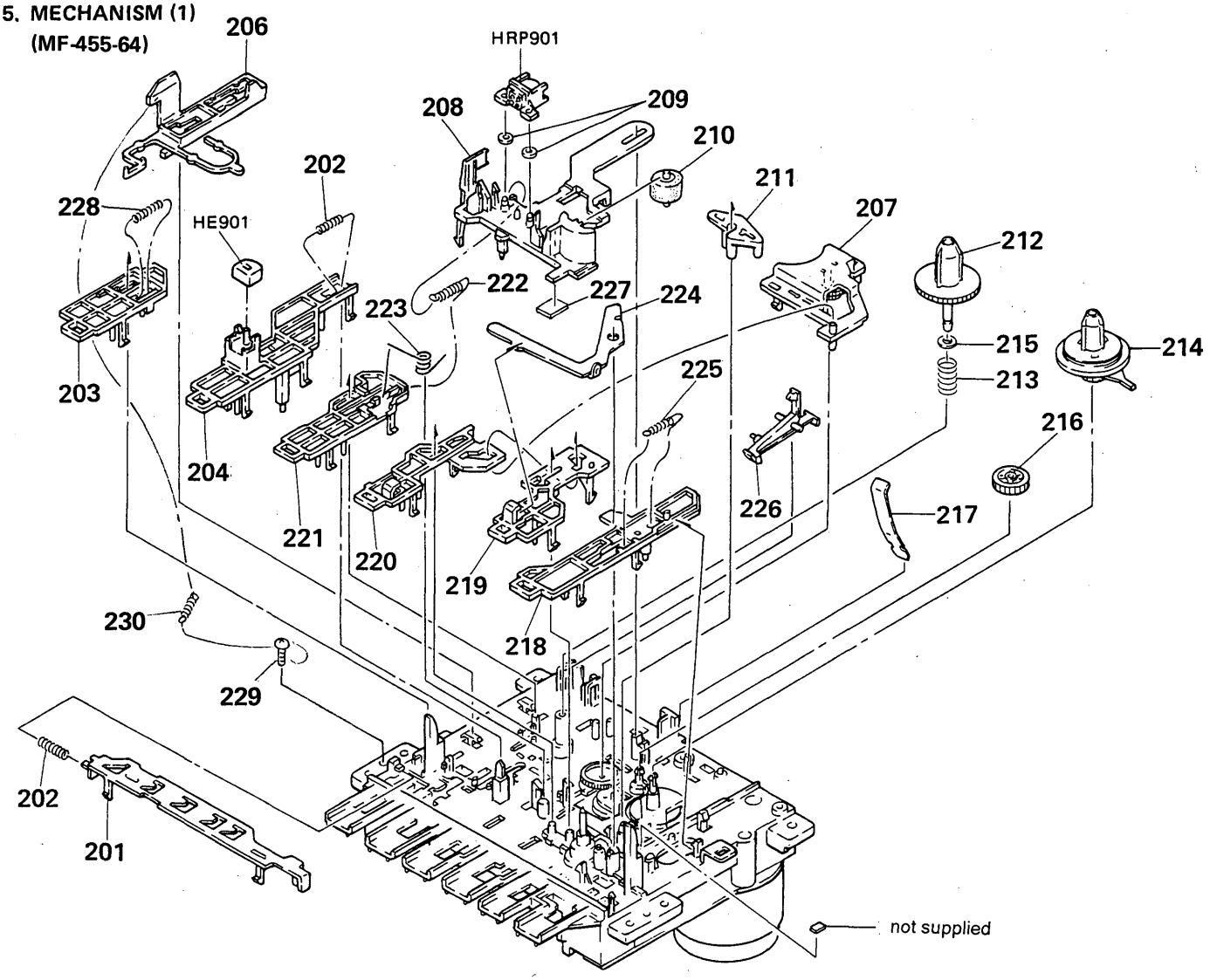
No.	Part No.	Description	Remarks
151	2-641-403-06	GEAR (B)	
152	2-641-404-02	GEAR (A)	
153	3-303-809-31	SCREW (M1.7X3.0), SPECIAL HEAD	
154	2-641-434-01	COVER, GEAR	
155	X-2640-771-1	TURNTABLE, ASSY	
156	*4-910-431-01	SHAFT, SLIDE	
157	2-641-444-01	HOLDER (J), CHASSIS	
159	7-621-255-15	SCREW +P 2X3	
160	7-621-255-45	SCREW +PTT 2X6 (S)	
161	7-621-255-25	SCREW +PTT 2X4 (S)	
162	2-641-448-02	CLAMP, SHAFT	
163	2-641-447-01	SCREW (2.6X8), + STP	
909	⚠8-848-137-11	DEVICE, OPTICAL KSS-210B	
M702	1-541-352-11	MOTOR, SPINDLE	
M703	X-2640-770-1	MOTOR ASSY, SLED	

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

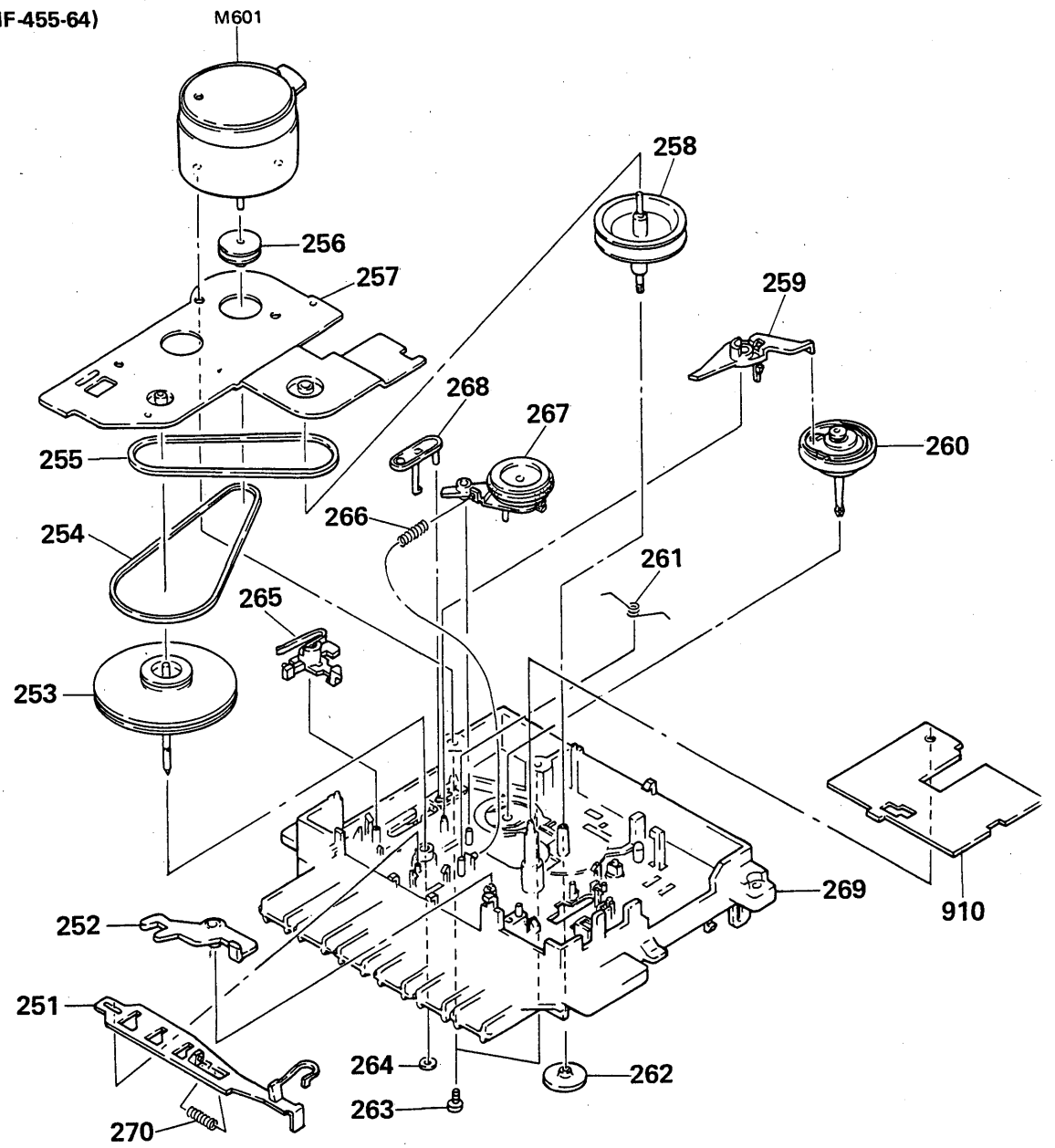
REVISED

5. MECHANISM (1)
(MF-455-64)



No.	Part No.	Description	Remarks
201	4-928-995-01	SLIDER, LOCK	
☛ 202	4-932-648-01	SPRING, COMPRESSION	
203	4-928-985-01	LEVER, STOP	
204	4-928-990-01	LEVER, REC	
206	4-928-983-01	SLIDER, EJECT	
207	X-4918-584-1	LEVER ASSY, FR	
208	4-928-998-01	BASE, HEAD	
209	3-701-438-01	WASHER (T=0.13)	
210	4-928-962-01	PINCH ROLLER	
211	4-928-982-01	LEVER (C)	
212	4-928-978-01	GEAR (C), SUPPLY REEL	
213	3-343-381-01	SPRING, COMPRESSION	
214	X-4918-585-1	GEAR (C) ASSY, TAKE-UP REEL	
215	4-931-795-11	WASHER	
216	3-343-285-01	GEAR, FF	
217	4-928-957-01	RETAINER, CASSETTE	
218	4-928-994-01	LEVER, PAUSE	
219	4-928-993-01	LEVER, FF	
220	4-928-992-01	LEVER, REW	
221	4-928-991-01	LEVER, PLAY	
222	4-928-972-01	SPRING, TENSION	
223	4-928-973-01	SPRING	
224	*4-928-984-01	LEVER (D)	
225	3-313-372-01	SPRING, TENSION	
226	4-928-960-01	CLAW, SAFETY	
227	4-932-612-01	SHEET, HD	
☛ 228	4-932-648-01	SPRING, COMPRESSION	
229	7-685-645-79	SCREW, +BVTP 3X6	
230	4-930-269-01	SPRING, TENSION	
HE901	1-543-525-11	HEAD, MAGNETIC (ERASE)	
HRP901	1-543-628-11	HEAD, MAGNETIC (REC/PB)	

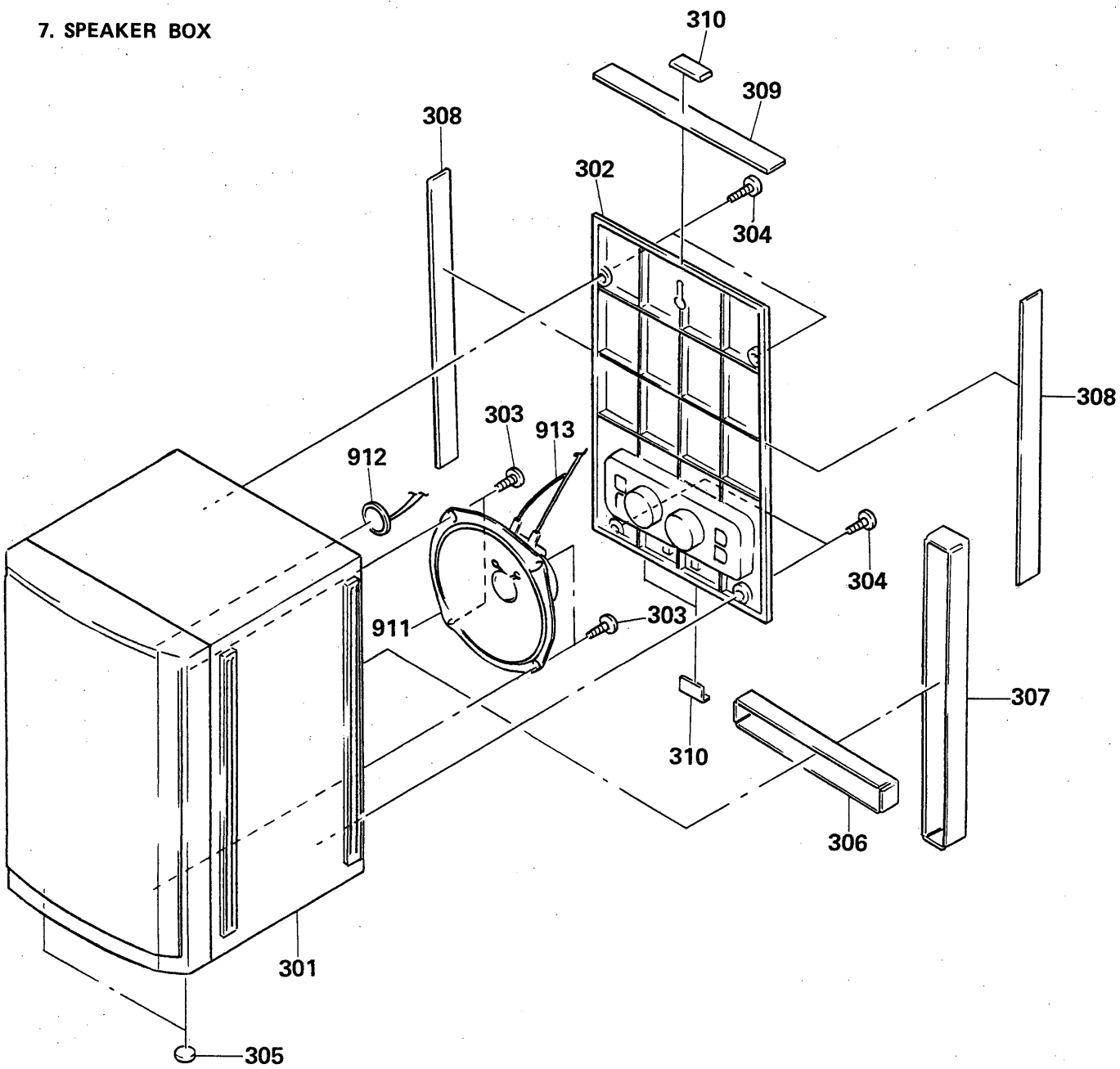
6. MECHANISM (2)
(MF-455-64)



No.	Part No.	Description	Remarks
251	4-928-996-01	LEVER, SW	
252	4-928-981-01	LEVER, FRSW	
253	X-4918-576-1	WHEEL (C) ASSY, CAPSTAN	
254	4-928-951-01	BELT (CAPSTAN)	
255	4-928-974-01	BELT (MIDWAY)	
256	X-3313-308-1	PULLEY (P), MOTOR ASSY	
257	*X-4918-598-1	PLATE ASSY, GROUND	
258	X-4918-580-1	PULLEY ASSY, FR	
259	4-928-986-01	LEVER (S), SHUT-OFF	
260	X-4918-582-1	PLATE ASSY, TAKE-UP REEL	
261	4-928-958-01	SPRING, FR RETURN	

No.	Part No.	Description	Remarks
262	4-928-967-01	GEAR (C), MIDWAY	
263	7-621-775-20	SCREW +B 2.6X5	
264	3-343-358-01	RING, RETAINING	
265	4-928-987-01	LEVER (T), SHUT-OFF	
266	3-342-034-01	SPRING, COMPPESSION	
267	X-4918-583-1	LEVER ASSY, IDLER	
268	4-928-961-01	PLATE, PAUSE LOCK	
269	*X-4918-579-1	CHASSIS ASSY, MECHANICAL	
270	4-931-746-01	SPRING, COMPRESSION	
910	*1-630-864-31	PC BOARD, SWITCH	
M601	1-541-625-11	MOTOR, DC	

7. SPEAKER BOX



No.	Part No.	Description	Remarks
301	X-4920-914-1	BOX ASSY (RIGHT), SP	
	X-4920-915-1	BOX ASSY (LEFT), SP	
302	*4-930-212-01	LID, REAR, S.P.	
303	7-685-648-79	SCREW, TAPPING +BV 3X12	
304	7-685-647-79	SCREW +BTP 3X10 TYPE2 N-S	
305	4-930-231-01	FOOT	
306	4-930-245-01	REINFORCEMENT (A)	
307	4-930-250-01	REINFORCEMENT (B)	
308	4-930-248-01	SPACER B	
309	4-930-247-01	SPACER A	
310	3-840-486-01	CUSHION SP	
911	1-544-102-11	SPEAKER (L/R)	
912	1-529-058-11	BUZZER (L/R)	
913	1-559-620-11	CORD (WITH CONNECTOR)	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
901	*A-3260-908-A	MOUNTED PCB, MAIN			
902	*1-629-991-11	PC BOARD, GEQ VOL			
903	*1-629-992-11	PC BOARD, POWER			
904	1-533-217-31	HOLDER, FUSE			
905	*1-629-994-11	PC BOARD, CD CONTROL			
906	*A-3216-732-A	(455)...PC BOARD ASSY, MAIN, CD			
	*A-3216-743-A	(454)...PC BOARD ASSY, MAIN, CD			
907	*1-629-996-11	PC BOARD, CD LEAF SW			
908	*1-629-995-11	PC BOARD, CD MOTOR			
909	⚠8-848-137-11	DEVICE, OPTICAL KSS-2108			
910	*1-630-864-31	PC BOARD, SWITCH			
911	1-544-102-11	SPEAKER (L/R)			
912	1-529-058-11	BUZZER (L/R)			
913	1-559-620-11	CORD (WITH CONNECTOR)			
ANT1	1-501-383-21	ANTENNA, TELESCOPIC			
C1	1-162-208-31	CERAMIC	24PF	5%	50V
C2	1-102-960-00	CERAMIC	24PF	5%	50V
C3	1-162-191-31	CERAMIC	2.2PF	10%	50V
C4	1-162-196-31	CERAMIC	5.6PF	10%	50V
C5	1-124-963-11	ELECT	33MF	20%	16V
C6	1-164-095-11	CERAMIC	0.01MF	10%	16V
C7	1-161-379-00	CERAMIC	0.01MF	30%	16V
C8	1-162-187-31	CERAMIC	1PF	20%	50V
C9	1-162-287-31	CERAMIC	270PF	10%	50V
C10	1-124-477-11	ELECT	47MF	20%	16V
C11	1-124-925-11	ELECT	2.2MF	20%	50V
C12	1-124-477-11	ELECT	47MF	20%	16V
C13	1-164-095-11	CERAMIC	0.01MF	10%	16V
C14	1-164-095-11	CERAMIC	0.01MF	10%	16V
C15	1-124-499-11	ELECT	1MF	20%	50V
C16	1-124-927-11	ELECT	4.7MF	20%	50V
C17	1-161-053-00	CERAMIC	0.015MF	10%	25V
C18	1-161-053-00	CERAMIC	0.015MF	10%	25V
C19	1-124-499-11	ELECT	1MF	20%	50V
C20	1-124-902-00	ELECT	0.47MF	20%	50V
C21	1-124-927-11	ELECT	4.7MF	20%	50V
C22	1-124-443-00	ELECT	100MF	20%	10V
C23	1-124-902-00	ELECT	0.47MF	20%	50V
C24	1-124-902-00	ELECT	0.47MF	20%	50V
C25	1-162-282-31	CERAMIC	100PF	10%	50V
C50	1-124-902-00	ELECT	0.47MF	20%	50V
C51	1-162-282-31	CERAMIC	100PF	10%	50V
C52	1-162-282-31	CERAMIC	100PF	10%	50V
C101	1-124-927-11	ELECT	4.7MF	20%	50V
C102	1-162-293-31	CERAMIC	820PF	10%	50V

Ref.No.	Part No.	Description			
C103	1-162-282-31	CERAMIC	100PF	10%	50V
C104	1-124-443-00	ELECT	100MF	20%	10V
C105	1-124-927-11	ELECT	4.7MF	20%	50V
C106	1-124-499-11	ELECT	1MF	20%	50V
C107	1-102-122-00	CERAMIC	0.0027MF	10%	50V
C108	1-124-925-11	ELECT	2.2MF	20%	50V
C109	1-124-925-11	ELECT	2.2MF	20%	50V
C110	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C112	1-124-443-00	ELECT	100MF	20%	10V
C113	1-124-443-00	ELECT	100MF	20%	10V
C114	1-124-473-11	ELECT	1000MF	20%	10V
C115	1-136-169-00	FILM	0.22MF	5%	50V
C116	1-124-499-11	ELECT	1MF	20%	50V
C201	1-124-927-11	ELECT	4.7MF	20%	50V
C202	1-162-293-31	CERAMIC	820PF	10%	50V
C203	1-162-282-31	CERAMIC	100PF	10%	50V
C204	1-124-443-00	ELECT	100MF	20%	10V
C205	1-124-927-11	ELECT	4.7MF	20%	50V
C206	1-124-499-11	ELECT	1MF	20%	50V
C207	1-102-122-00	CERAMIC	0.0027MF	10%	50V
C208	1-124-925-11	ELECT	2.2MF	20%	50V
C209	1-124-925-11	ELECT	2.2MF	20%	50V
C210	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C212	1-124-443-00	ELECT	100MF	20%	10V
C213	1-124-443-00	ELECT	100MF	20%	10V
C214	1-124-473-11	ELECT	1000MF	20%	10V
C215	1-136-169-00	FILM	0.22MF	5%	50V
C216	1-124-499-11	ELECT	1MF	20%	50V
C301	1-123-382-00	ELECT	3.3MF	20%	50V
C302	1-124-443-00	ELECT	100MF	20%	10V
C303	1-124-927-11	ELECT	4.7MF	20%	50V
C304	1-130-479-00	MYLAR	0.0047MF	5%	50V
C305	1-124-120-11	ELECT	220MF	20%	16V
C306	1-130-470-00	MYLAR	820PF	5%	50V
C307	1-130-473-00	MYLAR	0.0015MF	5%	50V
C308	1-124-927-11	ELECT	4.7MF	20%	50V
C309	1-124-443-00	ELECT	100MF	20%	10V
C310	1-123-875-11	ELECT	10MF	20%	50V
C311	1-124-480-11	ELECT	470MF	20%	25V
C312	1-124-120-11	ELECT	220MF	20%	16V
C313	1-161-379-00	CERAMIC	0.01MF	30%	16V
C314	1-161-379-00	CERAMIC	0.01MF	30%	16V
C315	1-124-120-11	ELECT	220MF	20%	16V
C316	1-124-120-11	ELECT	220MF	20%	16V
C317	1-124-927-11	ELECT	4.7MF	20%	50V

Ref.No.	Part No.	Description			
C318	1-124-963-11	ELECT	33MF	20%	16V
C319	1-130-482-00	MYLAR	0.0082MF	5%	50V
C320	1-126-176-11	ELECT	220MF	20%	10V
C321	1-161-379-00	CERAMIC	0.01MF	30%	16V
C322	1-161-379-00	CERAMIC	0.01MF	30%	16V
C323	1-124-120-11	ELECT	220MF	20%	16V
C324	1-162-282-31	CERAMIC	100PF	10%	50V
C325	1-161-379-00	CERAMIC	0.01MF	30%	16V
C326	1-124-499-11	ELECT	1MF	20%	50V
C327	1-161-379-00	CERAMIC	0.01MF	30%	16V
C328	1-161-379-00	CERAMIC	0.01MF	30%	16V
C329	1-124-963-11	ELECT	33MF	20%	16V
C330	1-124-120-11	ELECT	220MF	20%	25V
C331	1-124-499-11	ELECT	1MF	20%	50V
C332	1-124-499-11	ELECT	1MF	20%	50V
C333	1-123-875-11	ELECT	10MF	20%	50V
C334	1-123-875-11	ELECT	10MF	20%	50V
C335	1-126-233-11	ELECT	22MF	20%	25V
C336	1-124-120-11	ELECT	220MF	20%	16V
C337	1-124-120-11	ELECT	220MF	20%	16V
C338	1-162-282-31	CERAMIC	100PF	10%	50V
C339	1-162-294-31	CERAMIC	0.001MF	10%	50V
C340	1-124-499-11	ELECT	1MF	20%	50V
C341	1-124-499-11	ELECT	1MF	20%	50V
C342	1-124-499-11	ELECT	1MF	20%	50V
C343	1-124-499-11	ELECT	1MF	20%	50V
C350	1-162-294-31	CERAMIC	0.001MF	10%	50V
C356	1-162-294-31	CERAMIC	0.001MF	10%	50V
C701	1-130-475-00	MYLAR	0.0022MF	5%	50V
C702	1-124-963-11	ELECT	33MF	20%	16V
C703	1-162-294-31	CERAMIC	0.001MF	10%	50V
C704	1-124-443-00	ELECT	100MF	20%	6.3V
C705	1-126-176-11	ELECT	220MF	20%	6.3V
C706	1-130-489-00	MYLAR	0.033MF	5%	50V
C707	1-131-386-00	TANTALUM	33MF	10%	3.15V
C708	1-130-489-00	MYLAR	0.033MF	5%	50V
C709	1-130-483-00	MYLAR	0.01MF	5%	50V
C710	1-124-963-11	ELECT	33MF	20%	16V
C711	1-162-207-31	CERAMIC	22PF	5%	50V
C712	1-162-207-31	CERAMIC	22PF	5%	50V
C713	1-124-472-11	ELECT	470MF	20%	10V
C714	1-161-379-00	CERAMIC	0.01MF	30%	16V
C715	1-136-173-00	FILM	0.47MF	5%	50V
C716	1-130-483-00	MYLAR	0.01MF	5%	50V
C717	1-162-294-31	CERAMIC	0.001MF	10%	50V
C718	1-124-902-00	ELECT	0.47MF	20%	50V
C719	1-162-851-11	CERAMIC	0.1MF		16V
C720	1-130-489-00	MYLAR	0.033MF	5%	50V
C721	1-124-963-11	ELECT	33MF	20%	16V
C722	1-130-475-00	MYLAR	0.0022MF	5%	50V
C723	1-161-021-11	CERAMIC	0.047MF	10%	25V
C724	1-162-294-31	CERAMIC	0.001MF	10%	50V
C725	1-136-165-00	FILM	0.1MF	5%	50V
C726	1-136-165-00	FILM	0.1MF	5%	50V
C727	1-124-963-11	ELECT	33MF	20%	16V
C728	1-131-377-00	TANTALUM	10MF	10%	6.3V
C729	1-136-165-00	FILM	0.1MF	5%	50V
C730	1-123-875-11	ELECT	10MF	20%	50V

Ref.No.	Part No.	Description			
C731	1-161-061-11	CERAMIC	0.068MF	10%	25V
C732	1-162-215-31	CERAMIC	47PF	5%	50V
C733	1-124-963-11	ELECT	33MF	20%	16V
C734	1-130-481-00	MYLAR	0.0068MF	5%	50V
C735	1-162-284-31	CERAMIC	150PF	10%	50V
C736	1-161-379-00	CERAMIC	0.01MF	30%	16V
C737	1-161-379-00	CERAMIC	0.01MF	30%	16V
C738	1-161-379-00	CERAMIC	0.01MF	30%	16V
C739	1-161-379-00	CERAMIC	0.01MF	30%	16V
C740	1-124-963-11	ELECT	33MF	20%	16V
C743	1-130-479-00	MYLAR	0.0047MF	5%	50V
C744	1-124-499-11	ELECT	1MF	20%	50V
C745	1-130-475-00	MYLAR	0.0022MF	5%	50V
C746	1-130-469-00	MYLAR	680PF	5%	50V
C747	1-102-960-00	CERAMIC	24PF	5%	50V
C748	1-126-176-11	ELECT	220MF	20%	6.3V
C749	1-124-499-11	ELECT	1MF	20%	50V
C750	1-130-488-00	MYLAR	0.027MF	5%	50V
C751	1-124-499-11	ELECT	1MF	20%	50V
C752	1-124-604-00	ELECT	330MF	20%	10V
C753	1-126-176-11	ELECT	220MF	20%	6.3V
C754	1-124-438-00	ELECT	1MF	20%	50V
C755	1-130-475-00	MYLAR	0.0022MF	5%	50V
C756	1-130-469-00	MYLAR	680PF	5%	50V
C757	1-102-960-00	CERAMIC	24PF	5%	50V
C758	1-124-499-11	ELECT	1MF	20%	50V
C759	1-124-499-11	ELECT	1MF	20%	50V
C760	1-130-488-00	MYLAR	0.027MF	5%	50V
C761	1-136-173-00	FILM	0.47MF	5%	50V
C763	1-162-199-31	CERAMIC	10PF	5%	50V
C764	1-162-199-31	CERAMIC	10PF	5%	50V
C765	1-162-294-31	CERAMIC	0.001MF	10%	50V
C770	1-124-360-00	ELECT	1000MF	20%	16V
C771	1-124-499-11	ELECT	1MF	20%	50V
C772	1-123-382-00	ELECT	3.3MF	20%	50V
C773	1-123-382-00	ELECT	3.3MF	20%	50V
C774	1-123-382-00	ELECT	3.3MF	20%	50V
C775	1-123-382-00	ELECT	3.3MF	20%	50V
C780	1-124-963-11	ELECT	33MF	20%	16V
C781	1-124-963-11	ELECT	33MF	20%	16V
C784	1-126-176-11	ELECT	220MF	20%	6.3V
C790	1-161-379-00	CERAMIC	0.01MF	30%	16V
C791	1-124-927-11	ELECT	4.7MF	20%	50V
C792	1-124-499-11	ELECT	1MF	20%	50V
C794	1-124-499-11	ELECT	1MF	20%	50V
C801	1-124-963-11	ELECT	33MF	20%	16V
C802	1-161-379-00	CERAMIC	0.01MF	30%	16V
C803	1-162-219-31	CERAMIC	68PF	5%	50V
C804	1-162-219-31	CERAMIC	68PF	5%	50V
C851	1-162-292-31	CERAMIC	680PF	10%	50V
C852	1-162-215-31	CERAMIC	47PF	5%	50V
C853	1-162-215-31	CERAMIC	47PF	5%	50V
C856	1-162-294-31	CERAMIC	0.001MF	10%	50V
C901	1-124-771-00	ELECT	6800MF	20%	25V
C902	1-161-379-00	CERAMIC	0.01MF	30%	25V
C903	1-161-494-00	CERAMIC	0.022MF	30%	25V
C904	1-161-379-00	CERAMIC	0.01MF	30%	25V
C905	1-161-379-00	CERAMIC	0.01MF	30%	25V

Ref.No.	Part No.	Description
CF1	1-577-327-81	FILTER, CERAMIC (FM IF)
CF2	1-577-327-81	FILTER, CERAMIC (FM IF)
CF3	1-577-327-81	FILTER, CERAMIC (FM DISCRIMINATOR)
CN301	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CN302	*1-564-704-51	PIN, CONNECTOR (SMALL TYPE) 2P
CN303	*1-564-708-51	PIN, CONNECTOR (SMALL TYPE) 6P
CN304	*1-564-705-51	PIN, CONNECTOR (SMALL TYPE) 3P
CN305	*1-564-707-61	PIN, CONNECTOR (SMALL TYPE) 5P
CN306	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
CN307	*1-566-973-11	PIN, CONNECTOR (PC BOARD) 8P
CN317	*1-566-970-11	HOUSING, CONNECTOR(PC BOARD)8P
CN601	*1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P
CN701	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CN702	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CN703	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P
CN704	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P
CN705	*1-564-705-51	PIN, CONNECTOR (SMALL TYPE) 3P
CN706	*1-562-477-11	CONNECTOR (SOCKET) 3P
CN713	*1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P
CN811	*1-568-451-11	HOUSING, CONNECTOR, 10P
CN812	*1-568-451-11	HOUSING, CONNECTOR, 10P
CN813	*1-568-451-11	HOUSING, CONNECTOR, 10P
CN903	*1-564-708-51	PIN, CONNECTOR (SMALL TYPE) 6P
CP1	1-236-079-11	ENCAPSULATED COMPONENT
CT1 CV1	1-151-624-11	CAP, VARIABLE
D1	8-719-911-19	DIODE 1SS119
D2	8-719-911-19	DIODE 1SS119
D3	8-719-300-71	DIODE SEL2210R (FM ST)
D301	8-719-911-19	DIODE 1SS119
D302	8-719-911-19	DIODE 1SS119
D303	8-719-911-19	DIODE 1SS119
D304	8-719-300-71	DIODE SEL2210R (OPR/BATT)
D305	8-719-109-93	DIODE RD6.2ES-B2
D306	8-719-109-97	DIODE RD6.8ES-B2
D307	8-719-110-17	DIODE RD10ES-B2
D309	8-719-110-17	DIODE RD10ES-B2
D310	8-719-911-19	DIODE 1SS119
D311	8-719-911-19	DIODE 1SS119
D313	8-719-911-19	DIODE 1SS119
D314	8-719-911-19	DIODE 1SS119
D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119
D801	8-719-911-19	DIODE 1SS119
D802	8-719-911-19	DIODE 1SS119
D804	8-719-911-19	DIODE 1SS119
D805	8-719-911-19	DIODE 1SS119
D901	8-719-500-55	DIODE D3SBA10
F901 ⚠	1-532-747-11	FUSE, GLASS TUBE (5A)
FL1	1-236-022-11	FILTER, BAND PASS
HE901	1-543-525-11	HEAD, MAGNETIC (ERASE)
HRP901	1-543-628-11	HEAD, MAGNETIC (REC/PB)
IC1	8-752-035-68	IC CXA1238S
IC301	8-759-942-24	IC BA3312N
IC302	8-752-036-78	IC CXA1351S
IC303	8-759-820-22	IC LA4597
IC701	8-752-033-14	IC CXA1081Q
IC702	8-752-032-32	IC CXA1182Q-Z
IC703	8-752-329-15	IC CXD1130Q
IC704	8-752-323-64	IC CXK5816M-12L
IC706	8-759-710-98	IC NJM2100D
IC707	8-759-145-25	IC UPD6372GS
IC708	8-759-984-37	IC BA6293
IC709	8-759-984-37	IC BA6293
IC801	8-752-809-37	IC CXP5024-078Q
IC802	8-759-945-58	IC RC4558P
IC803	8-741-148-33	(455)...IC SBX1483-59
IC804	8-759-971-11	IC PST529D
J301	1-563-330-11	JACK (EXT MIC)
J302	1-566-891-11	JACK (PHONES)
J303	1-537-114-11	TERMINAL BOARD (SPEAKERS)
J304	1-563-716-21	JACK, PIN 2P (CD)
J901 ⚠	1-526-818-11	INLET, AC
L1	*1-428-029-11	COIL, AIR-CORE
L2	*1-422-354-11	COIL, AIR-CORE
L3	1-402-435-11	ANTENNA, FERRITE-ROD (MW)
L5	1-424-090-21	COIL, LINE FILTER
L4	1-410-975-11	INDUCTOR 47UH
L701	1-410-316-11	INDUCTOR 1UH
L702	1-410-678-31	INDUCTOR 220UH
L703	1-410-316-11	INDUCTOR 1UH
L704	1-410-678-31	INDUCTOR 220UH
L705	1-424-090-21	COIL, LINE FILTER
LCD1	1-808-726-21	DISPLAY PANEL, LIQUID CRYSTAL
M601	1-541-625-11	MOTOR, DC
M702	1-541-352-11	MOTOR, SPINDLE
M703	X-2640-770-1	MOTOR ASSY, SLED
Q5	8-729-900-85	TRANSISTOR DTC144WS
Q6	8-729-900-85	TRANSISTOR DTC144WS
Q7	8-729-806-30	TRANSISTOR 2SC4048
Q101	8-729-806-30	TRANSISTOR 2SC4048
Q102	8-729-900-85	TRANSISTOR DTC144WS
Q201	8-729-806-30	TRANSISTOR 2SC4048
Q202	8-729-900-85	TRANSISTOR DTC144WS
Q301	8-729-806-30	TRANSISTOR 2SC4048
Q302	8-729-806-30	TRANSISTOR 2SC4048
Q303	8-729-806-30	TRANSISTOR 2SC4048
Q304	8-729-806-30	TRANSISTOR 2SC4048
Q305	8-729-600-60	TRANSISTOR 2SA1115P
Q306	8-729-900-85	TRANSISTOR DTC144WS
Q307	8-729-808-76	TRANSISTOR 2SD1913SA-Q
Q308	8-729-808-76	TRANSISTOR 2SD1913SA-Q
Q309	8-729-905-67	TRANSISTOR 2SD1944-K
Q310	8-729-119-78	TRANSISTOR 2SC2785HFE
Q311	8-729-100-13	TRANSISTOR 2SC2001
Q701	8-729-116-57	TRANSISTOR 2SB1068K
Q702	8-729-119-78	TRANSISTOR 2SC2785HFE
Q703	8-729-119-78	TRANSISTOR 2SC2785HFE
Q704	8-729-119-78	TRANSISTOR 2SC2785HFE
Q705	8-729-900-63	TRANSISTOR DTA124ES
Q706	8-729-600-60	TRANSISTOR 2SA1115P

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
Q711	8-729-806-34	TRANSISTOR 2SC3400
Q712	8-729-119-78	TRANSISTOR 2SC2785HFE
Q713	8-729-119-78	TRANSISTOR 2SC2785HFE
Q714	8-729-900-63	TRANSISTOR DTA124ES
Q791	8-729-806-34	TRANSISTOR 2SC3400
Q792	8-729-806-34	TRANSISTOR 2SC3400
Q801	8-729-900-63	TRANSISTOR DTA124ES
Q802	8-729-900-74	TRANSISTOR DTC143TS
Q803	8-729-119-78	TRANSISTOR 2SC2785HFE

Ref.No.	Part No.	Description			
R1	1-249-441-11	CARBON	100K	5%	1/4W
R2	1-249-421-11	CARBON	2.2K	5%	1/4W
R3	1-249-415-11	CARBON	680	5%	1/4W
R4	1-249-407-11	CARBON	150	5%	1/4W
R5	1-249-401-11	CARBON	47	5%	1/4W
R6	1-249-427-11	CARBON	6.8K	5%	1/4W
R7	1-249-427-11	CARBON	6.8K	5%	1/4W
R8	1-247-887-00	CARBON	220K	5%	1/4W
R9	1-247-887-00	CARBON	220K	5%	1/4W
R10	1-249-421-11	CARBON	2.2K	5%	1/4W
R11	1-249-429-11	CARBON	10K	5%	1/4W
R12	1-249-409-11	CARBON	220	5%	1/4W
R14	1-249-426-11	CARBON	5.6K	5%	1/4W
R16	1-249-397-11	CARBON	22	5%	1/4W
R50	1-249-426-11	CARBON	5.6K	5%	1/4W
R51	1-249-426-11	CARBON	5.6K	5%	1/4W
R52	1-249-430-11	CARBON	12K	5%	1/4W
R53	1-249-433-11	CARBON	22K	5%	1/4W
R101	1-249-421-11	CARBON	2.2K	5%	1/4W
R103	1-249-437-11	CARBON	47K	5%	1/4W
R104	1-249-425-11	CARBON	4.7K	5%	1/4W
R105	1-249-430-11	CARBON	12K	5%	1/4W
R106	1-249-430-11	CARBON	12K	5%	1/4W
R107	1-249-417-11	CARBON	1K	5%	1/4W
R108	1-249-414-11	CARBON	560	5%	1/4W
R109	1-249-411-11	CARBON	330	5%	1/4W
R111	1-249-409-11	CARBON	220	5%	1/4W
R112	1-249-424-11	CARBON	3.9K	5%	1/4W
R114	1-249-407-11	CARBON	150	5%	1/4W
R115	1-249-430-11	CARBON	12K	5%	1/4W
R116	1-249-433-11	CARBON	22K	5%	1/4W
R117	1-249-425-11	CARBON	4.7K	5%	1/4W
R118	1-249-433-11	CARBON	22K	5%	1/4W
R119	1-249-406-11	CARBON	120	5%	1/4W
R120	1-249-421-11	CARBON	2.2K	5%	1/4W
R121	1-249-399-11	CARBON	33	5%	1/4W
R201	1-249-421-11	CARBON	2.2K	5%	1/4W
R203	1-249-437-11	CARBON	47K	5%	1/4W
R204	1-249-425-11	CARBON	4.7K	5%	1/4W
R205	1-249-430-11	CARBON	12K	5%	1/4W
R206	1-249-430-11	CARBON	12K	5%	1/4W
R207	1-249-417-11	CARBON	1K	5%	1/4W
R208	1-249-414-11	CARBON	560	5%	1/4W
R209	1-249-411-11	CARBON	330	5%	1/4W
R211	1-249-409-11	CARBON	220	5%	1/4W
R212	1-249-424-11	CARBON	3.9K	5%	1/4W
R214	1-249-407-11	CARBON	150	5%	1/4W
R215	1-249-430-11	CARBON	12K	5%	1/4W

Ref.No.	Part No.	Description				
R216	1-249-433-11	CARBON	22K	5%	1/4W	
R217	1-249-425-11	CARBON	4.7K	5%	1/4W	
R218	1-249-433-11	CARBON	22K	5%	1/4W	
R219	1-249-406-11	CARBON	120	5%	1/4W	
R220	1-249-421-11	CARBON	2.2K	5%	1/4W	
R221	1-249-399-11	CARBON	33	5%	1/4W	
R301	1-249-414-11	CARBON	560	5%	1/4W	
R302	1-249-405-11	CARBON	100	5%	1/4W	
R303	1-247-903-00	CARBON	1M	5%	1/4W	
R304	1-249-402-11	CARBON	56	5%	1/4W	
R305	1-249-435-11	CARBON	33K	5%	1/4W	
R306	1-249-389-11	CARBON	4.7	5%	1/4W	
R307	1-249-409-11	CARBON	220	5%	1/4W	
R308	1-249-417-11	CARBON	1K	5%	1/4W	
R309	1-247-890-11	CARBON	300K	5%	1/4W	
R310	1-249-405-11	CARBON	100	5%	1/4W	
R311	1-247-901-11	CARBON	820K	5%	1/4W	
R312	1-249-418-11	CARBON	1.2K	5%	1/4W	
R313	1-249-413-11	CARBON	470	5%	1/4W	
R314 ⚠	1-212-938-00	FUSIBLE	1.5	5%	1/2W	F
R315 ⚠	1-217-637-00	FUSIBLE	1	5%	1/4W	F
R316	1-249-411-11	CARBON	330	5%	1/4W	
R317	1-249-429-11	CARBON	10K	5%	1/4W	
R318	1-249-409-11	CARBON	220	5%	1/4W	
R319	1-249-417-11	CARBON	1K	5%	1/4W	
R320	1-249-417-11	CARBON	1K	5%	1/4W	
R321	1-249-409-11	CARBON	220	5%	1/4W	
R322 ⚠	1-249-381-11	CARBON	1	5%	1/4W	F
R323	1-249-415-11	CARBON	680	5%	1/4W	
R324 ⚠	1-217-639-00	FUSIBLE	2.2	5%	1/4W	F
R325 ⚠	1-247-696-11	CARBON	47	5%	1/4W	F
R326	1-249-427-11	CARBON	6.8K	5%	1/4W	
R327	1-249-417-11	CARBON	1K	5%	1/4W	
R328	1-249-429-11	CARBON	10K	5%	1/4W	
R329	1-249-441-11	CARBON	100K	5%	1/4W	
R330	1-249-405-11	CARBON	100	5%	1/4W	
R331	1-249-407-11	CARBON	150	5%	1/4W	
R332	1-249-437-11	CARBON	47K	5%	1/4W	
R333	1-249-423-11	CARBON	3.3K	5%	1/4W	
R334	1-249-435-11	CARBON	33K	5%	1/4W	
R335	1-249-421-11	CARBON	2.2K	5%	1/4W	
R336	1-249-417-11	CARBON	1K	5%	1/4W	
R701	1-249-433-11	CARBON	22K	5%	1/4W	
R702	1-249-417-11	CARBON	1K	5%	1/4W	
R703	1-249-433-11	CARBON	22K	5%	1/4W	
R704	1-249-397-11	CARBON	22	5%	1/4W	
R705	1-247-806-11	CARBON	91	5%	1/4W	
R711	1-249-428-11	CARBON	8.2K	5%	1/4W	
R712	1-247-856-00	CARBON	11K	5%	1/4W	
R713	1-249-441-11	CARBON	100K	5%	1/4W	
R714	1-247-856-00	CARBON	11K	5%	1/4W	
R715	1-249-441-11	CARBON	100K	5%	1/4W	
R716	1-247-886-11	CARBON	200K	5%	1/4W	
R717	1-249-422-11	CARBON	2.7K	5%	1/4W	
R718	1-247-903-00	CARBON	1M	5%	1/4W	
R719	1-249-417-11	CARBON	1K	5%	1/4W	
R720	1-247-883-00	CARBON	150K	5%	1/4W	

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
R721	1-249-437-11	CARBON	47K	5%	1/4W
R722	1-249-429-11	CARBON	10K	5%	1/4W
R723	1-249-441-11	CARBON	100K	5%	1/4W
R724	1-249-438-11	CARBON	56K	5%	1/4W
R725	1-247-885-00	CARBON	180K	5%	1/4W
R726	1-249-437-11	CARBON	47K	5%	1/4W
R727	1-249-441-11	CARBON	100K	5%	1/4W
R728	1-247-854-11	CARBON	9.1K	5%	1/4W
R729	1-247-894-11	CARBON	430K	5%	1/4W
R730	1-249-441-11	CARBON	100K	5%	1/4W
R731	1-215-461-00	METAL	47K	1%	1/6W
R732	1-215-461-00	METAL	47K	1%	1/6W
R733	1-247-895-00	CARBON	470K	5%	1/4W
R734	1-249-417-11	CARBON	1K	5%	1/4W
R735	1-249-417-11	CARBON	1K	5%	1/4W
R736	1-249-429-11	CARBON	10K	5%	1/4W
R743	1-215-438-00	METAL	5.1K	1%	1/6W
R744	1-215-456-00	METAL	30K	1%	1/6W
R745	1-215-454-00	METAL	24K	1%	1/6W
R746	1-215-471-00	METAL	120K	1%	1/6W
R747	1-249-431-11	CARBON	15K	5%	1/4W
R748	1-249-422-11	CARBON	2.7K	5%	1/4W
R749	1-247-834-11	CARBON	1.3K	5%	1/4W
R750	1-249-414-11	CARBON	560	5%	1/4W
R751	1-247-903-00	CARBON	1M	5%	1/4W
R752	1-249-430-11	CARBON	12K	5%	1/4W
R753	1-215-438-00	METAL	5.1K	1%	1/6W
R754	1-215-456-00	METAL	30K	1%	1/6W
R755	1-215-454-00	METAL	24K	1%	1/6W
R756	1-215-471-00	METAL	120K	1%	1/6W
R757	1-247-887-00	CARBON	220K	5%	1/4W
R758	1-249-422-11	CARBON	2.7K	5%	1/4W
R759	1-247-834-11	CARBON	1.3K	5%	1/4W
R760	1-249-414-11	CARBON	560	5%	1/4W
R761	1-247-903-00	CARBON	1M	5%	1/4W
R762	1-249-422-11	CARBON	2.7K	5%	1/4W
R763	1-249-422-11	CARBON	2.7K	5%	1/4W
R764	1-247-887-00	CARBON	220K	5%	1/4W
R765	1-249-395-11	CARBON	15	5%	1/4W
R766	1-249-401-11	CARBON	47	5%	1/4W
R768	1-249-405-11	CARBON	100	5%	1/4W
R770	1-215-453-00	METAL	22K	1%	1/6W
R771	1-215-453-00	METAL	22K	1%	1/6W
R772	1-215-453-00	METAL	22K	1%	1/6W
R773	1-215-453-00	METAL	22K	1%	1/6W
R774	1-215-429-00	METAL	2.2K	1%	1/6W
R775	1-215-457-00	METAL	33K	1%	1/6W
R776	1-215-457-00	METAL	33K	1%	1/6W
R777	1-215-457-00	METAL	33K	1%	1/6W
R778	1-215-433-00	METAL	3.3K	1%	1/6W
R779	1-247-868-11	CARBON	36K	5%	1/4W
R780	1-249-435-11	CARBON	33K	5%	1/4W
R781	1-247-876-11	CARBON	75K	5%	1/4W
R782	1-249-435-11	CARBON	33K	5%	1/4W
R783	1-249-417-11	CARBON	1K	5%	1/4W
R784	1-249-429-11	CARBON	10K	5%	1/4W
R785	1-249-410-11	CARBON	270	5%	1/4W

Ref.No.	Part No.	Description			
R786	1-249-419-11	CARBON	1.5K	5%	1/4W
R787 ⚠	1-212-861-11	FUSIBLE	15	5%	1/4W F
R789	1-249-433-11	CARBON	22K	5%	1/4W
R791	1-247-826-00	CARBON	620	5%	1/4W
R792	1-249-437-11	CARBON	47K	5%	1/4W
R793	1-249-429-11	CARBON	10K	5%	1/4W
R801	1-249-435-11	CARBON	33K	5%	1/4W
R802	1-249-435-11	CARBON	33K	5%	1/4W
R803	1-249-435-11	CARBON	33K	5%	1/4W
R805	1-249-437-11	CARBON	47K	5%	1/4W
R806	1-249-437-11	CARBON	47K	5%	1/4W
R807	1-249-441-11	CARBON	100K	5%	1/4W
R808	1-249-441-11	CARBON	100K	5%	1/4W
R809	1-249-437-11	CARBON	47K	5%	1/4W
R810	1-249-405-11	CARBON	100	5%	1/4W
R811	1-249-405-11	CARBON	100	5%	1/4W
R821	1-249-441-11	CARBON	100K	5%	1/4W
R851	1-215-457-00	METAL	33K	1%	1/6W
R852	1-247-893-11	CARBON	390K	5%	1/4W
R853	1-249-441-11	CARBON	100K	5%	1/4W
R854	1-247-895-00	CARBON	470K	5%	1/4W
R855	1-249-441-11	CARBON	100K	5%	1/4W
RV1	1-238-017-11	RES, ADJ, CARBON 22K			
RV301	1-238-480-11	RES, VAR, CARBON 50K (VOLUME)			
RV302	1-238-481-11	RES, VAR, SLIDE 50KX6 (EQ BALANCE)			
RV701	1-230-497-11	RES, ADJ, CARBON 20K			
RV702	1-230-498-11	RES, ADJ, CARBON 50K			
RV703	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K			
RV704	1-230-497-11	RES, ADJ, CARBON 20K			
RV705	1-230-497-11	RES, ADJ, CARBON 20K			
S301	1-570-916-11	SWITCH, SLIDE			
S302	1-571-264-11	SWITCH, LEVER SLIDE (FUNCTION)			
S303	1-571-307-11	SWITCH, SLIDE (ISS SW)			
S601	1-571-330-21	SWITCH, LEAF			
S603	1-571-890-11	SWITCH, LEAF			
S801	1-570-822-21	SWITCH, LEAF			
S802	1-571-936-11	SWITCH, LEAF			
S803	1-571-760-11	SWITCH, KEY BOARD (PLAY)			
S804	1-571-760-11	SWITCH, KEY BOARD (STOP)			
S805	1-571-760-11	SWITCH, KEY BOARD (AMS REVERSE)			
S806	1-571-760-11	SWITCH, KEY BOARD (SEARCH REVERS)			
S807	1-571-760-11	SWITCH, KEY BOARD (PAUSE)			
S808	1-571-760-11	SWITCH, KEY BOARD (PLAY MODE)			
S809	1-571-760-11	SWITCH, KEY BOARD (REMAIN)			
T1	1-406-040-00	COIL (OSC)			
T301	1-433-332-11	OSCILLATION TRANSFORMER, BIAS			
T901 ⚠	1-449-613-11	TRANSFORMER, POWER			
T902 ⚠	1-424-265-11	TRANSFORMER, LINE FILTER			
W716	1-506-569-11	PIN, CONNECTOR 3P			
W801	*1-568-455-11	PIN, CONNECTOR 10P			
W802	*1-568-455-11	PIN, CONNECTOR 10P			
W803	*1-568-455-11	PIN, CONNECTOR 10P			
X801	1-567-094-00	VIBRATOR, CERAMIC			
XF701	1-567-926-11	VIBRATOR, CRYSTAL (16.9344MMz)			

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

ACCESSORY & PACKING MATERIAL

⚠ 1-557-287-11 CORD, POWER
1-465-017-11 (455)...REMOTE COMMANDER (RM-C80)

3-750-229-21 MANUAL, INSTRUCTION
3-750-229-31 (Canadian)...MANUAL, INSTRUCTION

*4-930-219-01 CUSHION (UPPER)
*4-930-220-01 CUSHION (LOWER)

*4-930-221-01 (455)...INDIVIDUAL CARTON
*4-930-236-01 (454)...INDIVIDUAL CARTON

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

CFD-454/455

SONY
SERVICE MANUAL

US Model
CFD-454
CFD-455
Canadian Model
CFD-454

SUPPLEMENT-1

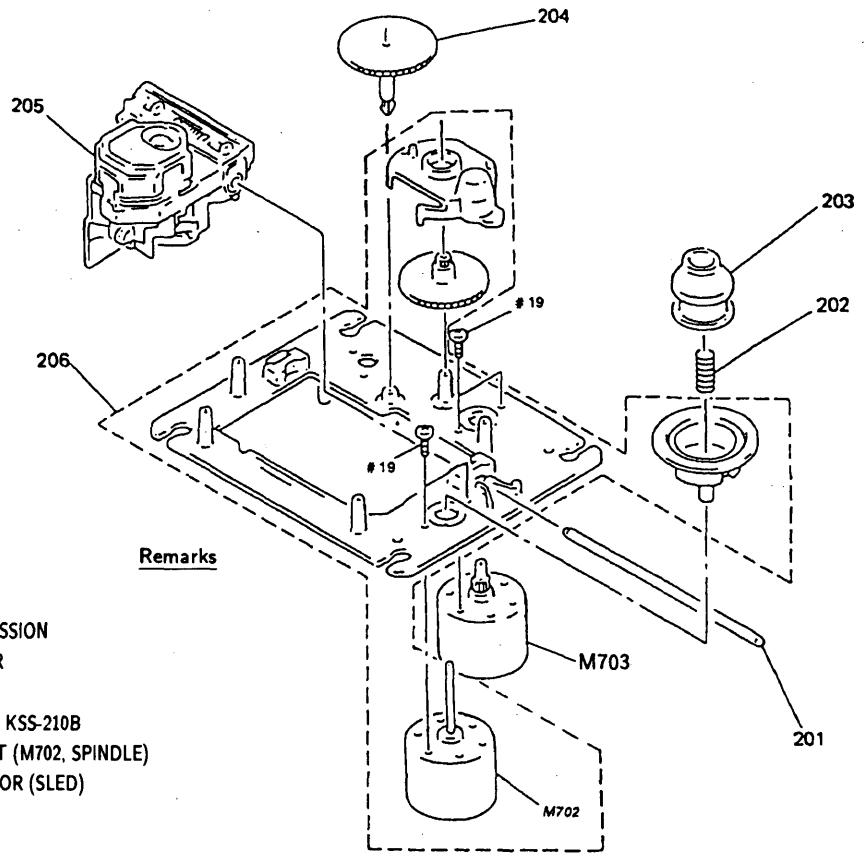
File this supplement with the service manual.

Subject : KSM-2101 BAN Optical Block Parts

The KSM-210 BAN and KSM-2101 BAN optical blocks were used in the CFD-454/455, but the Service Manual only shows the parts for KSM-210 BAN optical block. The type of optical block used in this model is marked on the optical block's chassis.

Refer to the following diagram for KSM-2101 BAN optical block parts :

OPTICAL BLOCK
(KSM-2101 BAN)



No.	Part No.	Description	Remarks
201	4-917-565-01	SHAFT, SLED	
202	2-625-191-01	SPRING, COMPRESSION	
203	2-625-186-01	RING (C), CENTER	
204	2-625-188-02	GEAR (A)	
205	⚠ 8-848-137-11	DEVICE, OPTICAL KSS-210B	
206	X-2625-133-1	CHASSIS ASSY, TT (M702, SPINDLE)	
M703	X-2625-132-1	GEAR ASSY, MOTOR (SLED)	
#19	7-621-255-15	SCREW +P 2×3	

9-953-790-81

Sony Corporation
General Audio Group

English
92G0631-1
Printed in Japan

© 1992.7

Published by Customer Relations and Service Group

CFD-454/455

SONY®
SERVICE MANUAL

US Model
Canadian Model
CFD-454
US Model
CFD-455

SUPPLEMENT-2

File this supplement with the service manual.

Subject : Change the CD main board

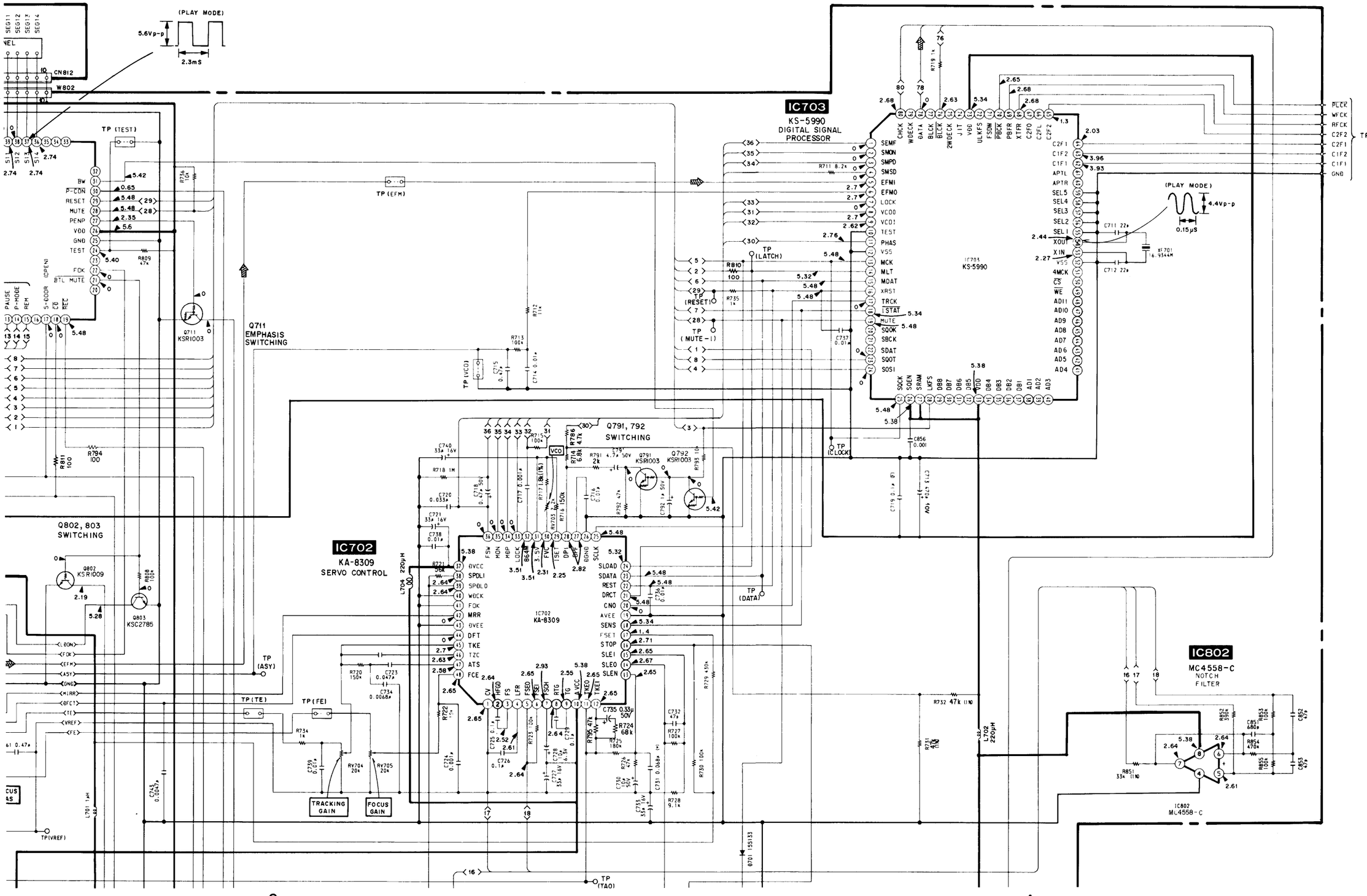
ELECTRICAL PARTS LIST

DIFFERENCE BETWEEN NEW AND FORMER TYPES

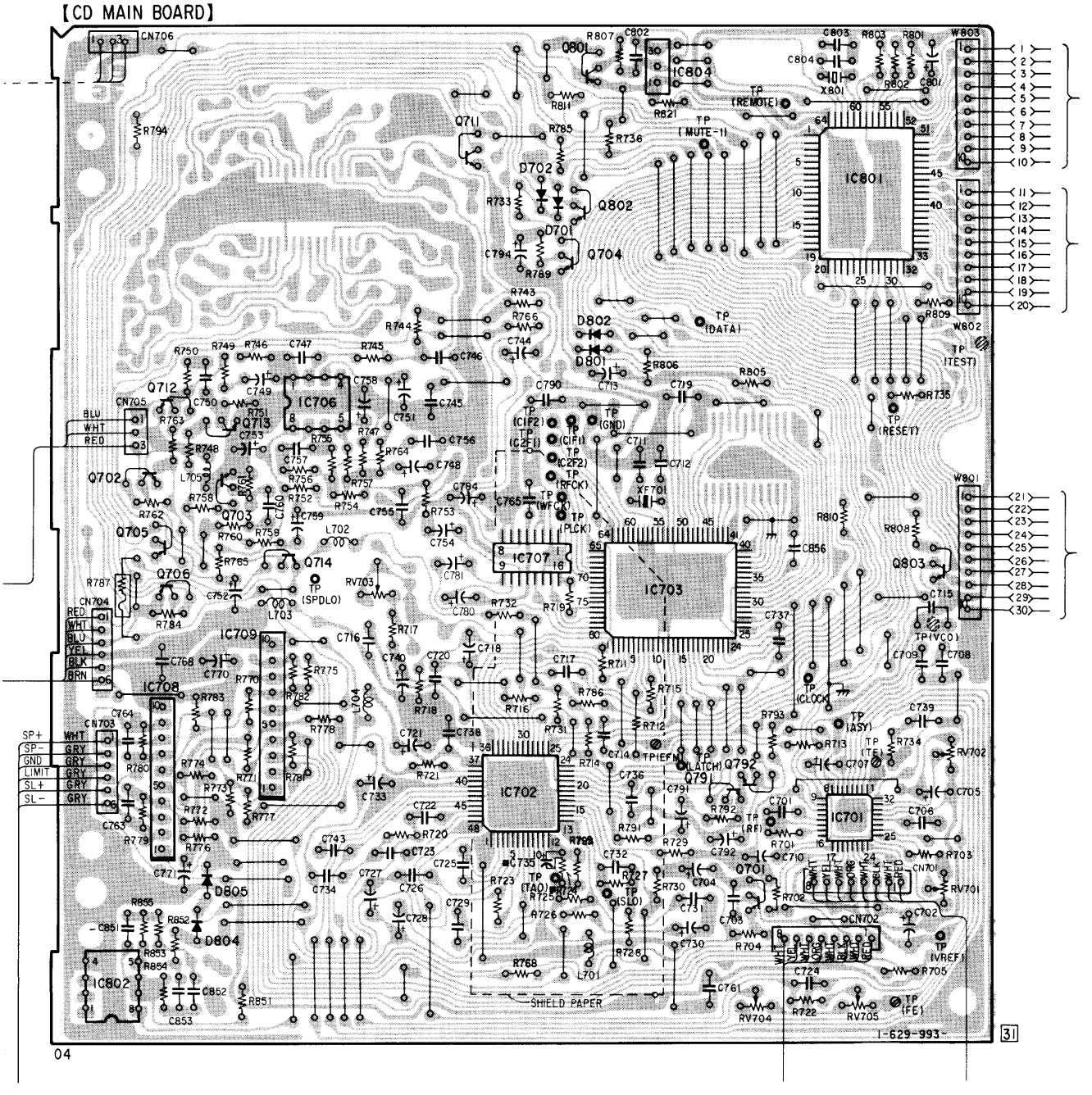
New Type						Former Type				
Ref.No.	Part No.	Description			Remark	Part No.	Description			Remark
		<CAPACITOR>					<CAPACITOR>			
C735	1-124-252-00	ELECT	0.33uF	20%	50V	1-162-284-31	CERAMIC	150PF	10%	50V
		<IC>					<IC>			
IC702	8-759-061-38	IC KA8309				8-752-037-48	IC CXA1182Q-Z			
IC703	8-759-061-39	IC KS5990				8-752-328-46	IC CXD1130Q			
IC704	DELETE					8-759-984-09	IC LH5116NA-10			
		<RESISTOR>					<RESISTOR>			
R714	1-249-427-11	CARBON	6.8K	5%	1/4W	1-249-425-11	CARBON	4.7K	5%	1/4W
R716	1-247-883-00	CARBON	150K	5%	1/4W	1-247-886-11	CARBON	200K	5%	1/4W
R717	1-215-427-00	METAL	1.8K	1%	1/4W	1-249-422-11	CARBON	2.7K	5%	1/4W
R721	1-249-438-11	CARBON	56K	5%	1/4W	1-249-437-11	CARBON	47K	5%	1/4W
R724	1-249-439-11	CARBON	68K	5%	1/4W	1-249-438-11	CARBON	56K	5%	1/4W
R731	1-215-461-00	METAL	47K	1%	1/4W	1-215-457-00	METAL	33K	5%	1/4W
R732	1-215-461-00	METAL	47K	1%	1/4W	1-215-457-00	METAL	33K	5%	1/4W
R795	1-249-437-11	CARBON	47K	5%	1/4W	————				

DIAGRAMS

SCHEMATIC DIAGRAM —CD SECTION—



PRINTED WIRING BOARD —CD SECTION—



9-953-790-82

Sony Corporation
General Audio Group

English
93A0431-1
Printed in Japan
© 1993. 1

Published by Audio Corporate Planning Group

9-953-790-12
(Including 9-953-790-91
9-953-790-92
With 9-953-790-81
9-953-790-82)
(Including 9-953-790-93)

Sony Corporation
General Audio Group

English
93J0503-1 (2)
Printed in Japan
© 1989. 6

Published by Audio Sector Quality Assurance Dept.

CFD-454/455

SONY
SERVICE MANUAL

US Model
CFD-454
CFD-455
Canadian Model
CFD-454

SUPPLEMENT-3

File this supplement with the service manual.

CHANGE OF RECORD/PLAYBACK HEAD

The record/playback head has two types : fixed type and adjustment type. When servicing and/or inspecting, check the type of the record/playback head and prepare the appropriate part.

- How to discriminate between these types

Fixed type : The tape guide of the head is provided at both sides.

Adjustment type : The tape guide of the head is provided at one side.

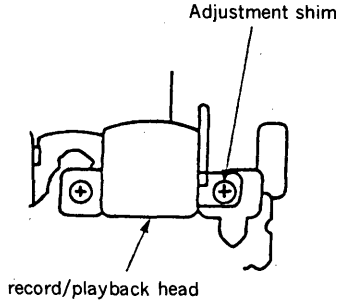
Adjustment Type :
MECHANICAL ADJUSTMENT

Tape Path Adjustment

When the mode is playback, run a mirror cassette, then turn adjustment screw to eliminate tape curl and tape twist at tape guide on erase head and record/playback head.
Adjust the height by using head shim if needed.
Standard : t=0.1

Part No.	t
3-336-274-01	0.1
3-336-274-11	0.2

Adjustment Location :

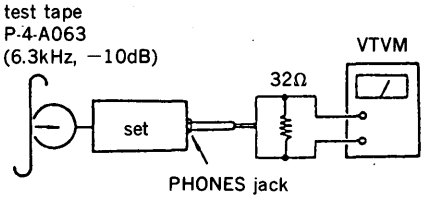


ELECTRICAL ADJUSTMENT

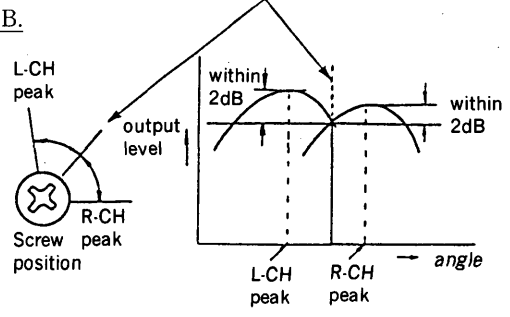
Record/Playback Head Azimuth Adjustment

Procedure : Adjust both FWD and REV.

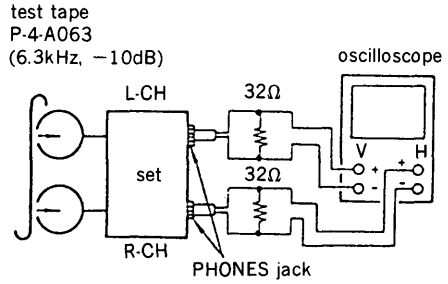
1. Mode : playback

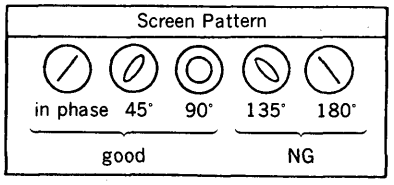


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 2dB.

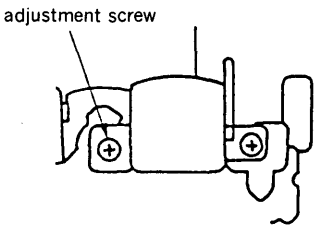


3. Phase Check
Mode : playback

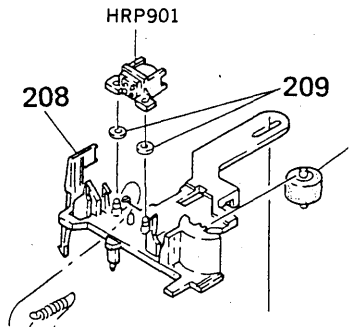
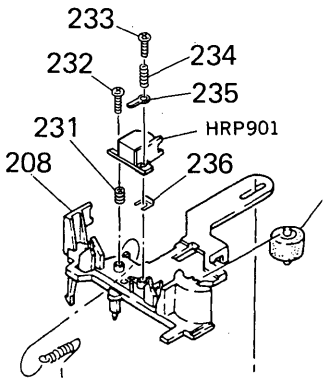




Adjustment Location :



DIFFERENCE OF PARTS LIST

Page	Ref No.	Fixed Type			Adjustment Type		
35							
		Part No.	Description	Remark	Part No.	Description	Remark
	208	4-928-998-01	BASE, HEAD		4-928-998-11	BASE, HEAD	
	209	3-701-438-01	WASHER (T=0.13)			—	
	231		—		3-324-028-01	SPRING, COMPRESSION	
	232		—		3-324-917-11	SCREW (IT3-C) TAPPING, +B	
	233		—		7-627-553-87	SCREW, PRECISION +P 2×7	
	234		—		3-318-237-01	SPRING, COMPRESSION	
	235		—		3-343-274-01	LUG (T)	
	236		—		3-336-274-01	SHIM (T=0.1)	
	236		—		3-336-274-11	SHIM (T=0.2)	
	HRP901	1-543-628-11	HEAD, MAGNETIC (REC/PB)		1-543-267-21	HEAD, MAGNETIC (REC/PB)	
40	HRP901	1-543-628-11	HEAD, MAGNETIC (REC/PB)		1-543-267-21	HEAD, MAGNETIC (REC/PB)	

9-953-790-83

Sony Corporation
Consumer A & V Products Company
Personal A & V Products Div.

English
94H0437-1D
Printed in Japan

© 1994. 8

Published by Home A & V Products Div.
Quality Engineering Dept.